	<u> </u>
2007 7 208	_(Office Use Only)
Proposal # 2001- 1208	

	n
PSP Cover Sheet Attach to the front of each proposal Title: Delta Studies Program: Sa San Joaquin County Office	oposal)
PSP COVER Oncota Studies Program: Sa	n Joaquin double
Proposal Title: Delta Studies Program: San Joaquin County Office	en & Science
Mailing Address:	
Fax: (209) 468-9170	
Fax (209)468-9170 Email: jwilson@sjcoe.net	
Amount of funding requested: \$102,097 (\$30	16,291 3 years) The source of the funds. If it is different for state or federal
funds list below.	Federal cost
State cost	Federal cost
State cost	X YesNo
a demonstrates?	X YesNo Applicant agency and In-Kind & cash support (\$39,000/3 yrs)
Cost share partners and amount contributed by each_	Applicanc agency
Identify partners and amount contributed by each from collaborators \$13,000 per year	(\$39,000/3 /==/
from Collaboration	(xl. only one box).
Indicate the Topic for which you are applying	Beyond the Riparian Corridor
П Natural Flow Regimes П Nonnative Invasive Species П Nonnative Invasive Species	
☐ Nonnative the asive operation ☐ Channel Dynamics/Sediment Transport	A CHARLES AND CHARLES
Channel Dynamics Geamon	The Maniford Assessition and recommend
☐ Flood Management ☐ Shallow Water Tidal/ Marsh Habitat	
☐ Shallow Water Hoal Walsh Hosel	☐ Fish Screens
 Contaminants 	
the project located in	? San Joaquin
What county or counties is the project located in	lin? See attached list and indicate number. Be as specific as Sacramento Delta
the project located	lin? See attached list and indicates and indicates
What CALFED ecozone is the projection -	Sacramento Delta
possible Section one	,
chack only one b	oox):
Indicate the type of applicant (check only one b	Federal agency
- Chaha a comp CSI	□ Non-profit
Public/Non-profit joint venture	□ Tribes
□ Local government/district	□ Private party
University Other:	-

Indi	cate the primary species which the proposal		
CX.	San Joaquin and East-side Delta tributaries fall	-run chi	nook salmon
文	Winter-run chinook salmon	Æ	Spring-run chinook salmon
凤	Late-fall run chinook salmon	乜	Fall-run chinook salmon
ďζ	Delta smelt	₹ I	Longfin smelt
瑈	Splittail	轻	Steelhead trout
Ç,	Green sturgeon	各	Striped bass
<u>R</u>	White Sturgeon	Æ	All chinook species
	Waterfowl and Shorebirds	粒	All anadromous salmonids
Ţ	Migratory birds	XI	American shad
CX.	-		
<u> </u>	cate the type of project (check only one box) Research/Monitoring Pilot/Demo Project Full-scale Implementation): 	Watershed Planning Education
ls th	is a next-phase of an ongoing project?	Yes	No <u>X</u> _
	e you received funding from CALFED before?	Yes	No_ x
lfye	s, list project title and CALFED number		
Hav	e you received funding from CVPIA before?	Yes	No_ <u>x</u> _
lf ye	s, list CVPIA program providing funding, project title ar	nd CVPI/	A number (if applicable):

By signing below, the applicant declares the following:

- The truthfulness of all representations in their proposal;
- The individual signing the form is entitled to submit the application on behalf of the applicant (if the applicant is an entity or organization); and
- The person submitting the application has read and understood the conflict of interest and confidentiality discussion in the PSP (Section 2.4) and waives any and all rights to privacy and confidentiality of the proposal on behalf of the applicant, to the extent as provided in the Section.

Ms. Judi Wilson, Director, Math & Science

Printed name of applicant

Signature of applicant

Kryn J. Busher Superintenden



SAN JOAQUIN COUNTY OFFICE OF EDUCATION

May 15, 2000

Mr. David Baker County Administrator San Joaquin County 222 E. Weber Ave. Stockton, CA 95202



Dear Mr. Baker,

This letter is to inform you of the submission by the San Joaquin County Office of Education to CALFED for a CALFED Environmental Education Grant. Funds from the grant will be utilized to implement program described in abstract below:

San Joaquin County Delta Studies Program

Thirty thousand Kindergarten through twelfth grade students in sixty schools San Joaquin County will be targeted to meet the California Academic Standards through classroom lessons focused on the aquatic and terrestrial habitats and ecological functions of the Delta. Three major activities will accomplish this goal:

- A Delta Studies Curriculum which is age appropriate, academic standards based and focused on the twelve
 topic areas of the CALFED Bay-Delta Ecosystem Restoration Program will be developed and field tested.
 Curriculum units will be, interdisciplinary, and directed to each grade (K-8) plus one grade (9-12) unit
 adaptable to a variety of applications in high school. Units will be based on state recommended environmental
 education curricula A Child's Place in the Environment (K-6), and the California CLASS Project (7-12) but
 modified specifically for place based lessons that relate specifically to CALFED goals.
- 2. Ten kits of materials and equipment to support above curriculum will be developed and multiple kits of each will be made available for checkout by teachers from a **Delta Education Resource Center**, housed at the San Joaquin County Office. The Delta Education Resource Center will also act as clearinghouse for preview of supplemental materials to enhance above curriculum and environmental education and sponsor training of community personnel involved in action projects.
- 3. A cadre of teacher leaders will be trained called Delta Educational Leaders for Teaching and Action (D.E.L.T.A.) to forward the implementation of the Delta Studies Curriculum and provide leadership at targeted school sites for implementation of the curriculum and involvement of classes at their school in community action projects related to the curriculum. DELTA Teachers will receive a stipend for one year to participate in 30 hours of training to effectively implement the Delta Studies Curriculum at their school site with other teachers.

A copy of the proposal is attached. If you wish more information, please contact me at (209) 468-4880 or jwilson@sjcoe.net.



SAN JOAQUIN COUNTY OFFICE OF EDUCATION

May 15, 2000

Ms. Kerry Sullivan
San Joaquin County Planning Commission
1810 E. Hazelton
Stockton, CA 95205



Dear Ms. Sullivan.

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Judi Wilson



SAN JOAQUIN COUNTY OFFICE OF EDUCATION

May 15, 2000

Delta Protection Commission 14215 River Rd. PO Box 530 Walnut Grove, CA 95690



Dear Delta Protection Commission,

This letter is to inform you of the submission by the San Joaquin County Office of Education to CALFED for a CALFED Environmental Education Grant. Funds from the grant will be utilized to implement program described in abstract below:

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A copy of the proposal is attached. If you wish more information, please contact me at (209) 468-4880 or jwilson@sjcoe.net.

Judi Wilson

Director, Mathematics and Science

Environmental Compliance Checklist

All applicants must fill out this Environmental Compliance Checklist. Applications must contain answers to the following questions to be responsive and to be considered for funding. <u>Failure to answer these questions and include them with the application will result in the application being considered nonresponsive and not considered for funding.</u>

Do any of the actions included in the proposal require compliance with either the California Environmental Quality Act

YES	NO X
If you answered yes to # I, identify	the lead governmental agency for CEQA/NEPA compliance.
Lead Agency	
If you answered no to # 1, explain	why CEQA/NEPA compliance is not required for the actions in the proposal.
	tired, describe how the project will comply with either or both of these laws. compliance process and the expected date of completion.
Will the applicant require access acactivities in the proposal?	cross public or private property that the applicant does not own to accomplish the
YES	NO

monitoring field projects for which specific field locations have not been identified will be required to provide access

needs and permission for access with 30 days of notification of approval.

6.	Please indicate what permits or other approvals may be required for the activities contained in your proposal. all boxes that apply.	Check
	LOCAL Conditional use permit Variance	

Subdivision Map Act approval Grading permit General plan amendment Specific plan approval Rezone Williamson Act Contract cancellation Other (please specify) Χ None required STATE **CESA Compliance** (CDFG) Streambed alteration permit (CDFG) CWA § 401 certification (RWQCB) (Coastal Commission/BCDC) Coastal development permit Reclamation Board approval Notification (DPC, BCDC) Other (please specify) None required FEDERAL (USFWS) **ESA** Consultation Rivers & Harbors Act permit (ACOE) CWA § 404 permit (ACOE) Other (please specify)

DPC = Delta Protection Commission CWA = Clean Water Act CESA = California Endangered Species Act USFWS = U.S. Fish and Wildlife Service ACOE = U.S. Army Corps of Engineers

None required

ESA = Endangered Species Act
CDFG = California Department of Fish and Game
RWQCB = Regional Water Quality Control Board
BCDC= Bay Conservation and Development Comm.

Land Use Checklist

All applicants must fill out this Land Use Checklist for their proposal. Applications must contain answers to the following questions to be responsive and to be considered for funding. Failure to answer these questions and include them with the application will result in the application being considered nonresponsive and not considered for funding.

1.	Do the actions in the proposal invorcestrictions in land use (i.e. con	olve physical changes to servation easement or pla	he land(i.e. grading, planting vegetation cement of land in a wildlife refuge)?	on, or breeching levees
	YES	•	. <u>X</u>	
	120		NO	
2.	If NO to # 1, explain what type of	factions are involved in t	he proposal (i.e., research only, plann	ing only).
3.	If YES to # 1, what is the propose	ed land use change or res	riction under the proposal?	
4.	If YES to # 1, is the land current	y under a Williamson Ac	t contract?	
	YES		NO	
5.	If YES to # 1, answer the following	g:		
	Current land use			-
	Current zoning Current general plan designation			
6.	If YES to #1, is the land classified Department of Conservation Impo	l as Prime Farmland, Far rtant Farmland Maps?	mland of Statewide Importance or Un	ique Farmiand on the
	YES	NO	DON'T KNOW	
7.	If YES to # 1, how many acres of	land will be subject to pl	ysical change or land use restrictions	under the proposal?
8.	If YES to # 1, is the property curr	ently being commercially	farmed or grazed?	
	YES	· .	NO	
9.	If YES to #8, what are		employees/acre	
		the total numb	er of employees	

10.	Will the applicant acquire any interest in land under the proposa	d (fee title or a conservation easement)?
		X
	YES	NO -
11.	What entity/organization will hold the interest?	
12.	If YES to # 10, answer the following:	
	Total number of acres to be acquired under proposal Number of acres to be acquired in fee Number of acres to be subject to conservation easement	
13.	For all proposals involving physical changes to the land or restrivill:	iction in land use, describe what entity or organization
	manage the property	
	provide operations and maintenance services	
	conduct monitoring	
14.	YES	X NO
15.	Does the applicant propose any modifications to the water right	or change in the delivery of the water:
	YES	NO
16.	If YES to # 15, describe	

·

APPLICATION FOR		2. DATE SUBMITTED		Applicant Identifier
FEDERAL ASSISTAN	CE	1		
<u> </u>		5/15/00	V 07175	State Application Identifier
1. TYPE OF SUBMISSION:		3. DATE RECEIVED B	YSIAIE	Grand Application 120
Construction	Preapplication Construction Non-Construction	4. DATE RECEIVED B	Y FEDERAL AGENCY	Federal Identifier
Non-Construction	Non-Construction	<u> </u>		
5. APPLICANT INFORMATION			Organizational Unit:	
Legal Name: San Joaquin Coun	to Office of F	ducation	Office of M	Math & Science
Address (give city, county, State,	and zin code):	<u> </u>	Name and telephone	number of person to be contacted on matters involving
		E010 0030	this application (give a	area code)
PO Box 213030, S	tockton, CA S	925T3-a030	(209) 468-4	
6. EMPLOYER IDENTIFICATION	NUMBER (EIN):		7. TYPE OF APPLIC	ANT: (enter appropriate letter in box)
	600		A. State	H. Independent School Dist.
8. TYPE OF APPLICATION:			B. County	I. State Controlled Institution of Higher Learning
<u> </u>	Continuation	Revision	C. Municipal	J. Private University
New	Continuation		D. Township	K. Indian Tribe
If Revision, enter appropriate lette	er(s) in box(es)	7	E. Interstate	L. Individual M. Profit Organization
			F. Intermunicipal	N. Other (Specify)
A, Increase Award B. Dec	rease Award C. Increa	se Duration	G. Special District	N. Other (opecity)
D. Decrease Duration Other(s	specify):		9. NAME OF FEDER	RAL AGENCY:
			CALFED	
10. CATALOG OF FEDERAL D	OMESTIC ASSISTANCE	NUMBER:	11. DESCRIPTIVE T	TITLE OF APPLICANT'S PROJECT:
10. CATALOG OF PEDERAL D	CINESTIC ASSISTANCE		7[
			- ¹∮	
TITLE: CALFED			Delta Stu	dies Program: San Joaquin
12. AREAS AFFECTED BY PRO	OJECT (Cities, Counties, S	States, etc.):	County Sc	chools
San Joaquin Cour	*			
13. PROPOSED PROJECT	14. CONGRESSIONAL	DISTRICTS OF:	·	
Environmental Ed.	a. Applicant		b. Project	
Start Date Ending Date		- Office	Delta Stu	dies Program
10/00 6/03 15. ESTIMATED FUNDING:	San Joaquin (County Office	16. IS APPLICATION	ON SUBJECT TO REVIEW BY STATE EXECUTIVE
,		,	ORDER 12372	PROCESS?
\$102,097 (per ea	ich of 3 years Is	00		
a. Federal	1*		a. YES. THIS PR	REAPPLICATION/APPLICATION WAS MADE
b. Applicant	306,291	.00	AVAILAE	BLE TO THE STATE EXECUTIVE ORDER 12372
b. Applicant	39,000		PROCES	SS FOR REVIEW ON:
c. State	\$	00	DATE _	
d. Local	\$.00	b. No. No	GRAM IS NOT COVERED BY E. O. 12372
e. Other	\$.00		ROGRAM HAS NOT BEEN SELECTED BY STATE REVIEW
f, Program income	s	.∞		CANT DELINQUENT ON ANY FEDERAL DEBT?
				
g. TOTAL	\$ 345,291		i —	
18. TO THE BEST OF MY KN	OWLEDGE AND BELIEF,	ALL DATA IN THIS API	PLICA HONPHEAPPLI	CATION ARE TRUE AND CORRECT, THE
DOCUMENT HAS BEEN DUL	Y AUTHORIZED BY THE	GOVERNING BODY OF	FIRE APPLICANT AND	D THE APPLICANT WILL COMPLY WITH THE
ATTACHED ASSURANCES	F THE ASSISTANCE IS A	WARDED.		c. Telephone Number
a. Type Name of Authorized R	epresentative	b. Title		(209) 468–4880
Roger Reimer		LDeputy_Sup	perintendent	e. Date Signed
d. Signature of Authorized Rep	presentative			5/11/00

State of California

DEPARTMENT OF WATER RESOURCES .

. The Resources Agency
Agreement No.
17 G. 7a. 7a.

Not Applicable/Environmental Education Proposal

STANDARD CLAUSES – GENERAL CONDITIONS FOR PUBLIC WORKS CONTRACTS

LICENSE. No bidder may bid on work for which it is not properly licensed by the Contractor's State License Board. Joint Venture bidders must possess a Joint Venture License. Bidders for this Agreement must have classification(s) of contractor's license, provide license number and expiration date and certify under penalty of perjury that the foregoing is true and correct.

EXAMINATION OF BID DOCUMENTS AND SITE. Bidder shall carefully examine site of work, plans and specifications. The bidder shall investigate conditions, character, quality of surface, or subsurface materials or obstacles to be encountered. No additions to the contract amount will be made because of the Contractor's failure to examine the site of work, plans and specifications.

SUBCONTRACTORS. (See Public Contract Code Section 4104.) The bidder shall set forth in its bid:

- a. The name and business address of each subcontractor who will perform work or labor or render services in an amount in excess of one-half of one percent (.5%) of the General Contractor's total bid; and
- b. The portion of work to be done by each subcontractor. (See Public Contract Code Section 4104.)

PAYMENT BOND. The Contractor shall furnish, concurrently with signing the contract, a Payment Bond to Accompany Construction Contract, Standard Form 807, in an amount not less than fifty percent (50%) of the amount of the contract when its bid exceeds \$5000. Such bond shall be executed by the Contractor and a corporate surety approved by the State.

WORKERS' COMPENSATION INSURANCE CERTIFICATION. Upon execution of the contract, the Contractor shall provide the State either with a certificate of insurance issued by an insurance carrier licensed to write workers' compensation insurance in the State of California, including the name of the carrier and date of expiration of the insurance, or a certificate of consent to self insure issued by the Director of the Department of Industrial Relations.

PREVAILING WAGE. It is hereby mutually agreed that the Contractor shall forfeit to the State a penalty of \$50 for each calendar day, or portion thereof, for each worker paid by it, or subcontractor under it, less than the prevailing wage so stipulated. In addition the Contractor further agrees to pay to each worker the difference between the actual amount paid for each calendar day, or portion thereof, and the stipulated prevailing wage rate for the same. This provision shall not apply to properly registered apprentices.

MAXIMUM HOURS. It is further agreed that the maximum hours a worker is to be employed is limited to 8 hours a day and 40 hours a week and the Contractor shall forfeit, as a penalty to the State, \$25 for each worker employed in the execution of the contract for each calendar day during which a worker is required or permitted to labor more than 8 hours in any calendar day or more than 40 hours in any calendar week in violation of Labor Code Sections 1810-1815, inclusive.

TRAVEL AND SUBSISTENCE PAYMENTS. Travel and subsistence payments shall be paid to each worker needed to execute the work, as such travel and subsistence payments are defined in the applicable collective bargaining agreements filed in accordance with Labor Code Section 1773.8.

APPRENTICES. Properly registered apprentices may be employed in the prosecution of the work. Every such apprentice shall be paid the standard wage paid to apprentices under the regulations of the craft or trade at which he or she is employed, and shall be employed only at the work of the craft or trade to which he or she is registered. The Contractor and each subcontractor must comply with the requirements of Labor Code Section 1777.5 and any related regulations regarding the employment of registered apprentices.

SUBSTITUTIONS. Pursuant to Section 3400 of the Public Contract Code, should the Contractor seek to substitute a brand of materials other than specified, the Contractor shall submit data substantiating the request for substitution of "an equal" item. The substantiating data must be presented for approval within thirty-five (35) days after the award of the agreement. The State shall be the sole judge as to the comparative quality and suitability of "an equal" item.

Not Applicable/Environmental Education Proposal

ANTI-TRUST CLAIMS. The Contractor offers and agrees and will require all of his subcontractors and suppliers to agree to assign to the awarding body all rights, title, and interest in and to all causes of action they may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act [Chapter 2 (commencing with Sec. 165700) of Part 2 of Division 7 of the Business and Professions Code], arising from purchases of goods, services, or materials, pursuant to the public works contract or the subcontract. The assignment made by the Contractor and all additional assignments made by the subcontractors and suppliers shall be deemed to have been made and will become effective at the time the awarding body tenders final payment to the Contractor, without further acknowledgment or the necessity of tendering to the awarding body any written assignments.

If an awarding body receives, either through judgment or settlement, a monetary recovery for a cause of action assigned under Government Code Sections 4550-4554, the assignor shall be entitled to receive reimbursement for actual legal costs incurred and may, upon demand, recover from the public body any portion of the recovery, including treble damages, attributable to overcharges that were paid by the assignor but were not paid by the public body as part of the bid price, less the expenses incurred in obtaining that portion of the recovery.

Upon demand in writing by the assignor, the assignee shall, within one year from such demand, reassign the cause of action assigned under Government Code Sections 4550-4554, if the assignor has been or may have been injured by the violation of law for which the cause of action arose and (a) the assignee has not been injured thereby, or (b) the assignee declines to file a court action for the cause of action.

PROGRESS PAYMENTS

- a. Ten percent of any progress payments that may be provided for under this contract shall be withheld pending satisfactory completion of all services under the contract. The Contractor may substitute securities for such retentions and receive any interest accrued provided in Section 22300 of the Public Contract Code.
- b. No progress payments shall be made unless the Contractor, upon execution of the contract, furnishes a faithful performance bond for not less than one-half the total amount payable under the contract.

PAYROLL RECORDS. The Contractor and each subcontractor shall comply with Labor Code Section 1776 regarding payroll records.

NONCOLLUSION AFFIDAVIT. All bidders shall submit with their bids a signed and notarized Noncollusion Affidavit (DWR 4206).

LABOR CODE PROVISIONS. Pursuant to Sections 1770 et seq. of the California Labor Code, the Director of the State Department of Industrial Relations has made the general prevailing wage determination covering the locality where work for this contract is to be performed. A copy of the publication General Prevailing Wage Rates is on file for inspection at the State Department of Water Resources, Contract Services Office, 1416 Ninth Street, Sacramento, CA.

The Contractor agrees to post a copy of the General Prevailing Wage Determination for the locality of each job site. The Contractor also agrees to comply with all requirements of the California Labor Code and to pay the forfeiture penalties and monies which may become due as provided in Sections 1775 and 1813 of that Code.

UNDOCUMENTED ALIENS. No bidder or Contractor shall be eligible to bid for or receive a public works or purchase contract, who has, in the preceding five years, been convicted of violating a State or federal law respecting the employment of undocumented aliens.

Not Applicable/E	hvironmen	tal Education Proposal Agreement No.:
		Exhibit:
NONCOLLUSION AFFIDAVIT TO I	BE EXECUT BID FOR PL	TED BY JBLIC WORKS
STATE OF CALIFORNIA))ss	
COUNTY OF	}	
		, being first duly sworn, deposes and
says (name)		
that he or she is	(position	of
•	(bosition)	tive)
	(the bidd	los)
not directly or indirectly induced or and has not directly or indirectly co- bidder or anyone else to put in a si- that the bidder has not in any man- communication, or conference with bidder, or to fix any overhead, prof- other bidder, or to secure any adva- of anyone interested in the propos- are true; and, further, that the bidd bid price or any breakdown thereo- data relative thereto, or paid, and of company, association, organization to effectuate a collusive or sham be	solicited an alluded, constant bid, or ner, directly anyone to it, or cost elantage agained contract; ler has not, f, or the corwill not pay, n, bid depos	collusive or sham; that the bidder has by other bidder to put in a false sham bid, spired, connived, or agreed with any that anyone shall refrain from bidding; or indirectly, sought by agreement, fix the bid price of the bidder or any other ement of the bid price, or of that of any nest the public body awarding the contract that all statements contained in the bid directly or indirectly, submitted his or her attents thereof, or divulged information or any fee to any corporation, partnership, sitory, or to any member or agent thereof By (Person signing for bidder)
DATED:		(Person signing for bidder)
		Subscribed and sworn to before me on
(Notarial Seal)	-	
		(Notary Public)

STATE OF CALIFORNIA

DEPARTMENT OF WATER RESOURCES

THE RESOURCES AGENCY

BIDDER'S BOND

We		_				
						
 	·					
			·			
•						INCIPAL, and
					as FR	MCIPAL, and
·						
•	•	•		,	•	
		 -			•	
· .	<u>, </u>					
as SURETY, are held and FOTAL AMOUNT OF THE DEPARTMENT OF THE United State we bind ourselves, our hear no case shall the liabi	Œ BID of the Princ tment of Water Re es, well and truly t eirs, executors, ad	ipal above name sources, for the cources, for the cources, for the cources and ministrators and	d submitted t work describe Director of t I successors,	by said Principal and below, for the he Department jointly and sev	to the State of Ca payment of which to which said bid y	lifornia, acting a sum in lawfu was submitted
	•					
That whereas the Pri construction specifically o	ncipal has submiti	DITION OF THE ed the above-me s, for which bids	ntioned bid to	o the State of Ca	difornia, as afores	aid, for certain
•				, California, on		
(Insert name	of city where bids wi	ll be opened)		, Camorina, on	(Insert date of	bid opening)
or						·
	•	•				
					· · · · · · · · · · · · · · · · · · ·	·,
					·	•
•	•					-
Сору	y here the exact descr	ription of work, inc	inding location,	as it appears on	he proposal)	
NOW, THEREFORE under the specifications, the prescribed form, in a performance and the otherwise, in WITNESS WHERE	after the prescribe accordance with the er to guarantee pa it shall be and rem	ed forms are pres ne bid, and files nyment for labor nain in full force	sented to him two bonds v materials, a and virtue.	for signature, a with the Depart 8 required by la	enters into a writt ment, one to gua	en contract, in rentee faithful
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		Address -		· '		

NOTE: Signatures of those executing for the surety must be properly acknowledged.

STATE OF CALIFORNIA

NONDISCRIMINATION COMPLIANCE STATEMENT

STD, 19 (REV, 3-95)

COMPANY NAME San Joaquin County Office of Education

The company named above (herinafter referred to as "prospective contractor") hereby certifies, unless specifically exempted, compliance with Government Code Section 12990 (a-f) and California Code of Regulations, Title 2, Division 4, Chapter 5 in matters relating to reporting requirements and the development, implementation and maintenance of a Nondiscrimination Program. Prospective contractor agrees not to unlawfully discriminate, harass or allow harassment against any employee or applicant for employment because of sex, race, color, ancestry, religious creed, national origin, physical disability (including HIV and AIDS), medical condition (cancer), age (over 40), marital status, denial of family care leave and denial of pregnancy disability leave.

CERTIFICATION

I, the official named below, hereby swear that I am duly authorized to legally bind the prospective contractor to the above described certification. I am fully aware that this certification, executed on the date and in the county below, is made under penalty of perjury under the laws of the State of California.

Dr. Roger Reimer, Ph.D., Deputy Superir OFFICIAL'S NAME	itendent	
5/11/00		
DATE EXECUTED -	EXECUTED IN THE COUNTY OF	
Roger Keinner	San Joaquin	•
PROSPECTVE CONTRACTOR'S SIGNATURE Deputy Superintendent		
PROSPECTIVE CONTRACTOR'S TITLE		
San Joaquin County Office of Education PROSPECTIVE CONTRACTOR'S LEGAL BUSINESS NAME		

B. Title Page

Title of Project: Delta Studies Program: San Joaquin County Schools

Name: San Joaquin County Office of Education

Address: PO Box 213030

Stockton, CA 95213

Phone: (209) 468-4880 **Fax:** (209) 468-9170

Email: jwilson@sjcoe.net

Participants/

Collaborators: Agency, School District, & Organizational Collaborators

As Described Through Letters of Support Contained in Proposal

Organization: County Office of Education

(State Agency)

Executive Summary: Delta Studies Program: San Joaquin County Schools

Thirty thousand Kindergarten through twelfth grade students in sixty schools San Joaquin County will be targeted to meet the California Academic Standards through classroom lessons focused on the aquatic and terrestrial habitats and ecological functions of the Delta. Three major activities will accomplish this goal:

- 1. A Delta Studies Curriculum, which is age appropriate, and focused on the twelve topic areas of the CALFED Bay-Delta Ecosystem Restoration Program will be developed and field tested. Curriculum units will be, interdisciplinary, and directed to each grade (K-8) plus one grade (9-12) unit adaptable to a variety of applications in high school.
- 2. Ten kits of materials and equipment to support above curriculum will be developed and multiple kits of each will be made available for checkout by teachers from a **Delta Education Resource**Center, housed at the San Joaquin County Office. The Delta Education Resource Center will also act as curriculum clearinghouse for preview of supplemental materials to enhance environmental education and sponsor training of community personnel involved in action projects.
- 3. A cadre of teacher leaders will be trained called **Delta Educational Leaders for Teaching and Action (D.E.L.T.A.)** to forward the implementation of the Delta Studies Curriculum and provide leadership at targeted school sites for implementation of the curriculum and involvement of classes at their school in community action projects related to the curriculum. **DELTA** Teachers will receive a stipend for one year to participate in 30 hours of training to effectively implement the Delta Studies Curriculum at their school site with other teachers.

C. Project Description:

1. Statement of the Problem

a. Problem

Area Targeted: The Delta is crucial to California's water resources. Drinking water for two-thirds of California's residents passes through the Delta, a vital link in the state's water supply and a critical habitat area. Irrigation water for much of California's vast agricultural fields is drawn from the Delta, which receives runoff from the majority of Sierra Nevada and Coast Range watersheds. Although it comprises just one percent of California's total area, the Delta is at the heart of competing water needs and controversy and is integral to area agriculture, municipal water development and quality, and fish and wildlife viability.

The San Joaquin County Office of Education, in collaboration with area agencies, current and past project personnel from CALFED funded projects, organizations, and county school districts, proposes to embark on an ambitious, yet much needed effort that will educate area students and teachers about the Delta consistent with CALFED's mission to restore and maintain ecological health and improve water quality management for beneficial uses in the Bay-Delta system. One hundred and eleven thousand kindergarten through twelfth grade students in 162 schools and fifteen school districts in San Joaquin County will become adult residents and citizens in an area that requires understanding and appreciation. Students need to obtain basic scientific knowledge in order that they become responsible voters and effective stewards of this 700 mile maze of sloughs and waterways surrounding 57 reclaimed levied islands and the urban areas that comprise San Joaquin County, California.

San Joaquin County continues to experience significant residential growth and was recently designated a "minority-majority" county where 51% of the residents are people of color and 49% are Caucasian. Twenty two percent of students in schools are non or limited English speaking with the most prevalent language spoken other than English being Spanish. Since 1989, there has been a 21% jump in kindergarten through twelfth grade enrollment. With so many new students, increasing population at schools, and many new immigrants with limited English skills, San Joaquin County is ripe for education that will increase student understanding of the Delta to help them to be responsible and educated decision makers in the future.

The San Joaquin County Office of Education, with an elected Superintendent of Schools and a five member elected Board of Education, serves as liaison between the state and local school districts to actively and effectively link state policy to local programs and students. Primary functions of the County Office of Education are to: 1) assist schools in improving services to students, 2) support and-oversee local school districts to ensure compliance with state laws, and 3) provide centralized services in areas such as budget management, data processing, curriculum and instruction, and technology

Educational Background: Basic science and attention to studies about public policy are primary to educating students about the Delta. Additional educational needs involve the ability of students to read and write and think mathematically. How can such an altered system such as the Delta

be managed to ensure water supply reliability while restoring the ecosystem? What is adaptive management? Why is biodiversity important? How can the results of efforts to restore the endangered species and habitat be measured? These questions are just a few that students can begin to address in their studies so that as adult citizens they can make responsible decisions about the Delta. Adaptive management is a mainstay in CALFED's ecosystem improvement program and can be taught by teachers and will be a valuable tool in learning how we can make the Delta a better place.

Yet, studies about the Delta and environmental education in general are not a core component of the California school curriculum. Environmental education is a hybrid of studies related to both science and social studies with secondary connections to both English-language arts and mathematics. Recent development of California Academic Standards for schools provide for direction in mathematics, English-language arts, history-social science, English language learning, and science, but none exist in California specifically for environmental education.

Haas and Lambert (1995), in an article published in the *Phi Delta Kappan*, emphasize the importance of students developing a "genius of place" whereby students are afforded the opportunity to be involved in their communities and become competent citizens through the "community as a focus of study." They also claim that "the world is altogether too abstract a concept to evoke the passion that one's own place does." The Pulitzer prize winning author Wallace Stegner expressed disappointment in his writing about not being taught anything about where he came from and how it devalued both the place and his own worth.

Schools in the county are mandated by the state to implement the academic standards and are intent on bringing up their scores on the Academic Performance Index, a "score" given to schools that reflects their performance on statewide achievement testing. A recent study by the State Education and Environment Roundtable (SEER) found that schools who provided environmental education and gave students opportunities to explore connections between subject area disciplines and among natural and social systems produced significant gains in student achievement and standardized testing in all academic assessments. Called EIC (Environment in Context) this study has significant implications towards forwarding environmental education in area schools who are required to improve test scores.

Teachers in county schools, however, are left to design environmental lessons with few resources and little direction. Quality curricula exists and is documented and described in the California State Compendia for Environmental Education, which rate the various curricula and provide information for teachers and schools. Yet, there is no easily usable source for teachers who wish to educate students about their "place," the Delta, but rather a potpourri of curricular materials that don't often fit within a cohesive whole. Teachers are also reticent to offer environmental education with no clear guide as to how the materials meet the various academic standards. Environmental education is often a "little bit of this" and "little bit of that" with no clear focus or direction across grade levels or within schools.

b. Conceptual Model

A conceptual model is provided in Appendix F.

c-e. Educational Objectives

The sixth annual National Environmental Education Training Foundation (NEETF)/Roper Knowledge and Behaviors in America (1997) suggests that the "more people know about the environment, the more clearly and objectively they can see a broader range of solutions." The Delta Studies Program proposes to embark on a three year project to accomplish the following:

Increase student and teacher knowledge at sixty targeted schools in San Joaquin County,
 California, of foundational concepts related to aquatic and terrestrial habitats, ecological functions, support of sustainable populations of plant and animal species, and the concept of adaptive management and stewardship, through studies about the Delta.

Major Activities to Accomplish this Goal are:

- 1. Develop a **Delta Studies Curriculum** consisting of ten curriculum units which are age appropriate, standards based, interdisciplinary and target the six goals of the CALFED Bay-Delta Ecosystem Restoration Program.
- Units will be appropriate for five days instruction per year at two hours per day or ten hours total of classroom instruction spread over a longer time.
- One unit of study will be developed per grade level Kdgn.-8th grade and one unit for grades 9-12 that can be utilized in a variety of high school courses for a total of ten units.
- A Child's Place in the Environment for K-6, and California CLASS Project (7-12) will provide a base for curriculum design and ideas for activities along with additional activity ideas derived from quality environmental education curricula described in each California Compendia for Environmental Education (Appendix A) and listed in the Bibliography.
- Each grade level unit will also offer suggested action projects appropriate for in the classroom or school site or off site at funded CALFED research and other community projects. Selected students and teachers in fifteen schools nearest to selected projects in years two and three will be assisted to enhance developed curriculum with involvement in monitoring or field experiences.
- 2. Develop and maintain a **Delta Education Resource Center** at the San Joaquin County Office of Education in Stockton, California
- Develop one kit per unit of curriculum comprised of materials and equipment to support the above developed curriculum and house multiple copies of each kit at the San Joaquin County Office of Education that will be available on a check-out basis to teachers for use in implementing the curriculum. Kits will consist of large plastic containers with all materials for teaching the unit contained within.
- Additional resource materials to support above curriculum will be available to teachers at the Delta.
 Education Resource Center, such as additional curriculum guides, support materials, educational software, posters, teacher background resources, literature, appropriate equipment, and an internet connected computer with printer with bookmarks to internet resources that will enhance the Delta Studies Kits.

- 3. Recruit, identify, train and support a cadre of 30 teacher leaders each per years Two and Three called **Delta Educational Leaders for Teaching and Action (D.E.L.T.A)** to forward the above two activities and provide training to other teachers and schools.
- * Each DELTA Teacher will receive a stipend to act as a catalyst for utilization of the curriculum at targeted school sites, serve as liaison between project personnel and the school and train other teachers at the site on units appropriate to their grade level. Sixty total teachers will serve in this capacity and DELTA Teachers will serve for one year.
- Thirty hours of training will be provided to each of the DELTA Teacher Leaders to prepare them for their role and help to implement the Delta Studies Curriculum at the site during five evening (4-7pm) meetings and during two Saturdays during the year. University credit will also be offered for the training.
- Three hours of training will also be offered the principal at the targeted site for a total of thirty principals during each of Years Two and Three.

Alignment with CALFED's ERP goals: The Delta Studies Curriculum and the accompanying action projects will embody the ERP goals. More information about specific connections is provided in Section D of this proposal. The Delta Studies Curriculum will utilize A Child's Place in the Environment for grades K-6 described in Appendix B and the California CLASS Project for grades 7-12 described in Appendix C as a source of possible concepts and a format for the curriculum. Lesson ideas will be derived from the above two curricula plus quality environmental curricula described in the California Environmental Education Compendia (Appendix A) published by the California Department of Education.

Targeted Audience: Several groups will benefit from this broad reaching plan:

- All 120 San Joaquin County schools will have access to the Delta Studies Curriculum in electronic version via a proposed website.
- Thirty schools in the county in each of Years Two and Three of the project (total sixty schools) will be selected for more intensive implementation with the provision of a teacher leader (Delta Educational Leaders for Teaching and Action-D.E.L.T.A. Teachers) and assist to implement the program schoolwide at every grade level. Thus, 15,000 students (@ appr. average of 500 per school) will receive instruction with the curriculum per year during Years Two and Three of the project.
- Elementary, middle & high schools targeted. Of the thirty schools per year, three will be high schools, three will be middle schools and the remainder (24) will be elementary only K-5 or K-8 schools. Schools will be selected by demonstrated interest, the availability and sponsorship of a motivated teacher leader, their proximity to available off site action projects and their Academic Performance Index score (with preference given to lowest performing schools in order to raise student achievement).
- All schools will do action projects as part of curriculum, but fifteen of the thirty schools in Years
 Two and Three will receive special assistance to perform an action project related to the developed
 curriculum. Action projects will be on site with the use of an internet connection, school garden, or

a simple classroom project, or be off site connected to a CALFED research project or other Delta related project. Schools who are near projects targeted in this proposal will be selected for off site work so as to facilitate transportation availability. Each of the fifteen selected schools will be assisted for involvement in at least one action project that will be selected and facilitated with help of school principal and site DELTA teacher leader.

- Thirty teacher leaders (DELTA Teacher Leaders) per each of Years Two and Three will receive thirty hours of training on the Delta Studies Curriculum during five evening (4-7pm) sessions and Saturdays (2) and serve as catalyst at their school site for schoolwide implementation. DELTA Teachers will receive a stipend to serve as liaison to the staff and work with the principal to provide training on each unit to the staff and help to collect data for the project.
- <u>Thirty principals</u> at targeted sites will receive three hours of instruction on the Delta Studies Curriculum and information on how to support the curriculum on site.

2. Proposed Scope of Work

a. Location

All work will be conducted within San Joaquin County, California under the auspices of the San Joaquin County Office of Education in collaboration with program partners and resource personnel. During Year One of the project, all work will occur at the San Joaquin County Office during development of the Delta Studies Curriculum by the development team. During Years Two and Three, work will occur at school sites and at sites of action projects around the county.

b. Approach

The overall approach of the Delta Studies Program is intended to build *capacity* for ongoing education to improve the knowledge base of present and future stakeholders in the Bay-Delta improvement process. Students at targeted schools will be provided standards based education through the provision of a **Delta Studies Curriculum** provided by teachers at schools led by a teacher leader (**D.E.L.T.A. Teachers**) who assists with the implementation with curriculum materials accessed from the **Delta Education Resource Center**.

This is a well laid out plan to 1) train teacher leaders who will continue to share their enthusiasm and knowledge with students, teachers and schools for years to come, 2) provide enhanced, place-based and Delta focused education to area students K-12 who will become future citizens and voting members of society and 3) compile curriculum and resources at one county repository for schools/teachers who wish to access the Delta Studies curriculum.

Pedagogy Focus & Content Focus of Curriculum: All lessons will be hands-on and conceptually based in that they build "big ideas" that reflect the systemic approach needed for attention to adaptive management processes. Solutions are not easy, decisions are often the result of working through dilemmas and knowledge requires a compilation of many facts and bits of information that are interdisciplinary and reflect a variety of standards in a variety of disciplines. A "Unifying Concept" as an outcome for the entire curriculum, along with one "Grade Level Concept" for each grade level will be developed (K-12) by a core team of teachers and representatives from partner agency personnel. An example of concept based teaching can been viewed in Appendix D which describes A Child's Place in

the Environment. All lessons developed for the curriculum will contribute towards student learning related to the concepts set forth for each grade level. There will be enough lessons for 10 hours of classroom instruction.

The curriculum will be based on California Academic Standards and will utilize the Point of View of Environmental Education for California (Appendix E) as a guide to present an unbiased, balanced, yet academic content based approach that forwards foundation learning related to the Delta.

Curriculum Developers: Delta Curriculum Studies developers will be selected to design the focus of the grade level units who will 1) have expertise in science and social science and 2) are experienced in environmental education and 3) are familiar with lessons and programs contained with the California Department of Education's Environmental Education Compendia. The development group will 1) identify key foundational learning about the Delta consistent with CALFED goals, 2) delineate key concepts for each grade level (K-12) and 3) develop lessons from ideas in already developed exemplary environmental education curricular programs. Lessons will not be copied from these curricula, but ideas will be gathered for possible lessons for the Delta Studies Curriculum.

At least thirty curriculum developers will be recruited. Two teachers from each grade level K-8 and four teachers from high school representing the disciplines of English, civics, biology and chemistry will be selected to assist with curriculum development. Agency representatives from the following will also be recruited:

U.S. Army Corp of Engineers

California Department of Fish and Game

U.S. Fish & Wildlife Service
National Marine Fisheries Service

State Water Resources Control Board

U.S.Bureau of Reclamation

Environmental Protection Agency National Fish & Wildlife Federation National Resource Conservation Service

U.S. Department of Agriculture

Additional representatives will also be recruited from local agencies and organizations such as:

City of Stockton, Dept of Public Works

University of the Pacific Faculty

Delta Keeper

Univ. of California Extension

Water Education Foundation

Sierra Club

County Of San Joaquin, Dept. of Public Works

Delta College Faculty

Farm Bureau

Water Districts within San Joaquin County

Audubon Society

Delta Protection Commission

Adopt-A-Watershed

Curriculum developers will be given information from the PSP, Section 3.3 as background information in developing the curriculum and be directed towards the CALFED goals as targets for lessons (further described in Section D1).

Interdisciplinary, Action Oriented Focus: The Delta Studies Curriculum lessons will incorporate science, social studies and English-language arts. Each of the curriculum units will contain a list of action projects that students and teachers can participate in that is either on site (especially for very young students) or off site (older students). An attempt will be made to draw upon present and former CALFED projects and involve teachers and students in monitoring and assessment projects related to

CALFED targeted topics. Personnel from these projects will be contacted and requested to sponsor a class of students and teacher who wishes to participate. A two hour training will be offered CALFED project personnel along with partner teachers targeted towards involving students, organizing the experience to derive maximum education benefit and ways to target the concepts contained in the Delta Studies Curriculum.

c. Monitoring and Assessment Plan

All project evaluation will be ongoing and will reflect input from all partners in the project. Success towards overall goal of project will be measured through evaluation of student work, teacher responses and program partner input. The **Delta Studies Curriculum** will be field tested Year Two with thirty schools and revised for use during Year Three based on input from teachers in targeted schools. Rubrics, portfolios, questionnaires, and other assessment tools will be utilized to measure progress towards deliverables.

d. Data Handling and Storage

All program materials developed, evaluation data and project products will be housed at the Delta Education Resource Center under direction of the Project Director and supervised by the Project Coordinator. The **Delta Studies Curriculum**, as well as information about the project and a list of all of the materials, curriculum and equipment available for check-out through the **Delta Education Resource Center** will be listed on the website.

e. Expected Products/Outcomes

Dissemination for the project will consist of provision of a special page on the San Joaquin County Website specifically designed for the **Delta Education Resource Center**, which provides for the 1) publication of the **Delta Studies Curriculum** on the web, 2) lists all available resources for check-out to county schools of resources in the **Delta Education Resource Center**, 3) publication of a special list of possible action projects and their contact personnel for area teachers to become involved in with their classes and 4) links to environmental resources and related state agencies and organizations. Website developer and maintainer will keep the information current and enlarge the site throughout the duration of the project.

f. Work Schedule

The Delta Studies Program is a three year project designed to begin in October of '00 and end in June '03. It is divided into four distinct project phases, each of which contributes to the overall success and ongoing sustainability of the project as follows:

Task	Deliverables	Beg. Date	End Date
Recruit, Select & Train	1. Roster of Delta Studies Curriculum developers that	Oct. '00	Nov '00
Curriculum Development	includes at least 2 teachers per grade level (K-8) + 4		
Group	high school teachers + eight agency personnel/ partners.		
	(30 total)		
Develop Delta Studies	1. Delta Studies Curriculum which provides one unit	Jan '01	Ongoing
Curriculum	encompassing 10 hours of lessons that is conceptually		

	based and targets CALFED goals. Curriculum will be revised in June "02 before publishing on the Website.		
Identify Action Projects Suitable for Delta Studies Curriculum	List of action projects either off site or suggestions for on school site appropriate for each grade level with contact person and description. List will be revised yearly	Jan 'Ol	June `03
Phase Two: Delta Educa	tion Resource Center		<u> </u>
Task	Deliverables	Beg. Date	End Date
Develop Kits for Delta Studies Curriculum	1. Kits of curriculum materials to support the Delta Studies Curriculum units that are available for check out to schools and teachers. Ample copies of Kits will be available so that several schools can implement at one time.	June '01	Ongoing
Gather Additional Materials for Preview and Inclusion into Delta Studies Curriculum	1 List of supporting/supplemental materials provided to teachers/schools that are available for preview or are additional and enhancing to the Delta Studies Curriculum. 2Provide computer with internet connection, printer and bookmarks for use at SJCOE.	Sept. '01	Ongoing
Phase Three: Delta Educ	ration Leaders for Teaching and Action		<u> </u>
Recruit and Select Thirty Schools Per Year for Intensive Implementation of Delta Studies Curriculum	List of schools involved in program per year for intensive implementation.	Sept. '01 Sept. '02	June '02 June '03
Recruit and Select ONE Teacher Leader per above school for	List of one teacher per school who will act as leader of project at school and receive special trng.	Sept. '01 Sept. '02	Oct. '01 Oct. '02
D.E.L.T.A. group Provide Introductory Training for ONE	Weekend retreat provided to Teacher Leaders (D.E.L.T.A group) about Delta Studies Curriculum,	Aug '01	Aug '01
Teacher Leader per school	standards connection and science content. (Fri eve/all day Sat= 15 hours)	Aug. '02	Aug '02
Provide Ongoing Support and	Two Sats during year (Oct & April) provided for ongoing trng. and troubleshooting(15 hours)	Oct. '02	Apr. '02
Troubleshooting for Teacher Leader		Oct '03	Apr. '03

D. Applicability to CALFED ERP Goals and Implementation Plan and DVPIA Priorities1. ERP Goals and DVPIA Priorities

The Delta Studies Curriculum and Kits, developed during Year One of the project, will target the CALFED ERP Goals. A team of teachers, agency personnel, organizational representatives and a facilitator will serve as the development team. The following will be provided as a possible starting point for the development team.

CALFED Goal	Possible* Focus for Delta Education Curriculum and Action Projects	Possible
	for Students by Grade Level Spans	Grade
	* ALL will not fit into a 10 hour curriculumthese suggested topics	Levels
	for Curriculum Team to consider during development	
1. At-Risk Species	*Learn about and identify flow-related barriers to fish migration of	7-12
	various targeted species.	
	*Explore and consider effects of habitat availability and quality for	
	various life stages of fish	
	*Learn of various contaminants such as nitrates, selenium, mercury,	
	pesticides, hydrocarbons, and other metals and their effect on at-risk	
	species and especially andranomous fish populations.	
	*Become familiar with targeted species such as delta smelt, chinook	
	salmon, steelhead trout, Sacramento splittail and observe how species	
	respond to ecosystem functions	
	*Learn of hydrologic and biologic relationships and investigate and	
	receive information on fish passage flows past flow related barriers	•
	*Learn of role of agriculture (ie: diversions) in relation to at risk species.	
	*Learn how at risk species are dependent on Delta and ways to produce a	
	large self sustaining population	
	*Learn about efforts to protect endangered species and how to provide	
	reliable supplies of water.	
2. Ecosystem	*Explore aquatic toxicity and its effect on the health of the Deita	5-6
Processes and Biotic	*Learn of rehabilitation, rather than restoration activities, for terrestrial	
Communities	biotic communities	
	*Explore and investigate efforts to protect native members of Delta	
	communities	
	*Begin to understand how physical and chemical processes have been	
	fundamentally altered by human communities.	
	*Begin to learn of channel dynamics and its effect on the Delta.	
3. Harvestable	* Included in above	5-12
Species		·
4. Habitats	*Introduction to Floodplains and their role in the health of the Delta	K-5
	*Explore living things in tidal and freshwater	•
	*Understand the importance of revegitation projects (riparian habitat)	
	*Understand how plants support different species	
	*Investigate recovery of endangered and wild species (fish/ducks)	
	*Learn of tidal & freshwater wetlands as critical areas for key species	
•	*Examine and learn of the e salt march, riparian forest, and freshwater	
	wetlands	-·
5. Non-Native	*Explore importance of mapping of non-native species	7-8
Invasive Species	*Learn of efforts and importance of eradication of non-native plant and	
	aquatic species	
	*Learn difference between native and non-native species.	
	*Identify and learn of non-native types such as Tamarisk, Arundo donax,	
	,Spartina spp., Egeria spp., the Chinese Mitten crab, water hyacinth	
•	,Asian clam and their effect on native species.	
	* Learn of influence of ship ballast, introduction of northern pike,	
	aquarists such as Hydrilla and their impact on native species	

6. Sediment and	*Introduce Water Monitoring and assessment projects	6-12
Water Quality	*Learn of river/floodplain interaction and riverine health	
	*Learn of dams/levees and their role in Delta health	
	*Learn of importance of elimination of toxics impacts on organisms in	
	system	1
	* Learn of Delta's role in drinking water, agriculture and fish and	
	wildlife habitat	

2. Relationship to Other Ecosystem Restoration Projects

Delta Studies Curriculum/Action Projects: The Delta Studies Curriculum will include suggestions for action projects that students and teachers can become involved in. Several of the action projects will be related to past and current CALFED funded projects. A sample of those projects is supplied as follows, and additional selections will be added in conjunction with curriculum development team ongoing throughout project under direction of Community Outreach Coordinator.

To impart a commitment of stewardship, it is necessary to invest students with a "sense of place," or, a love of a place and the organisms living there. The county of San Joaquin has numerous waterways in the Delta and watersheds emptying into them. Schools in the county are in relatively close proximity to these areas. Watershed and Reclamation District maps from the County Public Works Department have been obtained and compared to maps of the various school districts and school sites to determine relative proximity to CALFED, US Army Corps or CVPIA and other projects within County watersheds. All project personnel listed here have been contacted and have given approval for involvement in project and are open to involvement of teachers and schools in their project.

The brief survey performed in preparation for this proposal has determined that many schools that may become involved with the development and implementation of the Delta Studies Curriculum are near to possible action sites. The following list demonstrates how several of these relationships are already functioning to some extent. The present proposal will capitalize on these and new, yet to be developed connections. For example, Bear Creek High School students currently bicycle to their sample site a mile away on Bear Creek, while UOP, Stagg High School and Brookside School students can walk less than a block to the Calaveras River. As more sites are developed, attention will be paid to proximity to schools who might be targeted as participants in the project. Other classroom and school site action projects will be developed at other sites who are not in close proximity to off site action projects. A table of sample projects for consideration with present school participants follows:

Project/Site Name	Issues Targeted	Schools Presently Participating	Contacts	Watersheds	CALFED + Other Funding
Bear Creek Mosure Slough	Contamination/S iltation	Morada Mid School/Bear Creek High	Doug Perry Delta Keeper	Delta Eastside Tributaries	Lower Mokelumne
Calaveras	Anadromous	UOP, Stagg	Dr. Gary Litton	Calaveras River	Pollution

River	Fisheries	High, Brookside			Detection/Delta
		Sch.			Кеерег
Mormon	Pollution/Land	Lincoln High	Pam Martin	Calaveras River	US Army Corps
Slough	Conversion				
Mokelumne	Anadromous	Lodi High	Lodi Lake	Modelumne	CDF&G
River	Fisheries		Docent Program		EBMUD

3. N/A

4. N/A

5. System-Wide Ecosystem Benefits

Long range projections of impact of this curriculum suggest it can potentially produce a student who, at the end of graded 12, has received 100 hours (10 hours per year per grade level K-8 plus at least 10 hours in high school) of standards based instruction that matches issues congruent with ERP Goals of CALFED.

E. Qualifications

Project Director:

Judi Wilson
Director, Mathematics and Science
San Joaquin County Office of Education
PO Box 213030
Stockton, CA

Director, Math and Science since 1992. Serves as liaison between the California Department of Education to fifteen K-12 school districts in San Joaquin County for mathematics and science. Directs teacher training, assist schools and districts to implement California Academic Science and Mathematics Standards, and serves as project developer and project administrator for a variety of mathematics, science, and environmental education related initiatives. Former Regional Director for California Statewide Systemic Initiative for Mathematics and Science, and facilitator/trainer for a variety of environmental education curricula. Initiator and fiscal officer of California Environmental Education Community's Region 6A (one of 10 in state), and sponsor of several grants and projects for environmental education through EPA and California Department of Education. Former PreK-12 teacher and college instructor. Current Co-Director of Delta Sierra Science Subject Matter Project funded through the California Governor's Office and the University of California that serves seven counties in the region.

As Project Director, will supervise all program activities and personnel. Will conduct all monitoring and evaluation and supervise the development and housing of all materials related to the project. Will file all reports and serve as point of contact for project funders to the project.

Project Coordinator:

To Be Named

Qualifications will include expertise and experience in working with schools/teachers and environmental education. Will visit schools, supervise implementation of Delta Studies Curriculum and assist to train Delta Teacher Leaders as trainers at their site. Coordinator will assist to collect data for evaluation and will directly monitor the materials checkout from the Delta Education Resource Center. Project Coordinator will be a Teacher on Special Assignment from a school district in San Joaquin County who is released from classroom duties half time to be Project Coordinator.

Facilitator (Year One Only):

Olga Clymire
Lake County Office of Education
1152 S. Main St.
Lakeport, CA 95453

Olga Clymire, Curriculum Writer and Environmental Education Consultant from Lake County Office of Education. Involved in curriculum design for 14 years and in environmental science education and staff development for 20 years. Ms. Clymire has been involved in all parts of curriculum development and publication, including developing the concepts and topics of the lessons, writing activities for the lessons, and field testing and rewriting of lessons. She also has coordinated the efforts of an editor, illustrator, layout artist, printer, and instructional materials kit developer for a six-unit curriculum called A Child's Place in the Environment. Ms. Clymire is the principal author of the following publications: California edition of The CLASS (Classroom Learning Activities in Science and Social Science) Project, published by the California Department of Education in 1988 and 1992. California Outdoor Education Curriculum Guide, published by the California Department of Education in 1987. Closing the Loop, published by the California Integrated Waste Management Board in 2000.

Facilitator will direct the development of the Delta Studies Curriculum during Year One of project. This will include facilitating the development of concepts and subconcepts for a ten hour grade level curriculum with a Delta theme, leading a group of 30 knowledgeable individuals with diverse views and insuring that the curriculum will be developed and available for field test according to timeline proposed. Facilitator will direct secretarial support for the publishing of the field test version and supervise editing. Facilitator will also act as consultant to project for revision before Year Three and assist in advisory role in the development of the Kits.

Community Outreach Coordinator:

Dr. Dale Sanders 804 N. Tuxedo Ave. Stockton, CA 95204

Recently retired from position as Senior Environmental and Academic Planner at University of California, Berkeley. Currently a substitute teacher in Manteca Unified School District and volunteer in the San Joaquin County Office of Education program called TOPS, Teaching Opportunities for Partners in Science which matches retired scientists with elementary schools. Has Ph.D. in

entomology with minor in Science Curriculum Development from UC Berkeley and has held position as Sr. Planning Ecologist in Contra Costa County as well as a private consultant for issues such as biological research, pest management, and IPM training. Served as adjunct faculty of CSU Hayward and UCB for courses such as environmental studies, geography, and resource planning and management.

Community Outreach Coordinator will serve on Delta Studies Curriculum Development Team during Year One of project and have chief oversight of all action projects contained within the Delta Studies Curriculum during Year Two and Three of project. Will assist with selection and identification of suitable action projects for teachers, students and schools, will make contacts with project personnel and help to design appropriate activities for various age groups of students. During Years Two and Three of project will visit schools to promote and assist with both on site and off site action projects. Will serve as liaison for project to all project personnel connected to action projects and will facilitate off site projects for classes and assist with transportation options.

Website Developer/Maintainer

To Be Named

Website Developer and Maintainer will be a teacher with technology expertise who receives an extra stipend, over and above regular classroom duties, to serve as technology leader for the project. Primary responsibilities will involve website maintenance, and training for teachers to incorporate technology into lessons and action projects.

CostBudget Narrative (Years One -Three)

Item	Description	Yr ONE	Yr TWO	YR THREE
Personnel	Project Director	\$6,000	\$6,000	\$6,000
	20 days @\$300 day = CALFED		<u> </u>	
	10 days @\$300 day=Cost Share (\$3000)			
	Project Coordinator	\$25,000	\$25,000	\$25,000
	90 days/Half Time Teacher Contract	<u> </u>		
	Community Outreach Coordinator		\$15,500	\$15,500
	103.3 @ 150 per day			
	Facilitator (Year 1) for Delta Curriculum	\$13,500		
	38.5 days @\$350 day			
	Website Developer/Maintainer	\$2,000	\$2,000	\$2,000
	& School Visits and Teacher Trng. Years Two & Three	<u> </u>		
	Secretarial Time	\$6,500	\$4,500	\$4,500
	(Includes desk top publishing for Curriculum)			
Benefits	Project Director (covered by Cost Share-\$500)			
@ 20%	Project Coordinator	\$5,000	\$5,000	\$5,000
	Project Sec.	\$1,000	\$1,000	\$1,000
	Total:	\$59,000	\$59,000	\$59,000

C1:	Date Couling Coulin Lands at the Country Lands at t	61.200		
Supplies	Delta Studies Curriculum Development Team	\$1,200		
	Content information, meeting supplies for four days,			
	five evening (3 hrs ea) sessions			
	Curriculum, Kits, Delta Education Resource Center	\$4,475	\$2,400	\$2,400
	Year One: 45 Kits @\$99 ea; Years Two & Three:		1	
	Additional Resources to support Curriculum			
	Office, Copying, Phone	\$1,000	\$1,000	\$1.000
	Shelving/Presentation Materials for Resource Center	\$525		
	Trng. Supplies for DELTA Lead Teacher 30 hour trng.		\$5,000	\$5,000
	(35 x \$100) 2 hr Action Project Personnel Trng. (50 x			
	\$20) &3 hr Principal trng.(\$250)			
	Trng. Supplies for Delta Studies Facilitator for	\$1,200		
	Curriculum Development Team			
	(copies of curriculum for ideas, training videos,			
	presentation supplies)			
	Resource materials for 30 Curriculum Team or	\$3,000	\$3,000	\$3,000
	Teacher Leaders (30 x \$100)		·	·
•	(field test supplies for kits and lessons supplies)			
	Total:	\$11,400	\$11,400	\$11,400
Consultants	Stipends/Delta Studies Curriculum Development Team	\$22,500		
	(30 x \$750) four full days + five evening sessions (3	, , ,		
	hours ea.)			
	Stipends for Teacher Leaders (D.E.L.T.A.)		\$22,500	\$22,500
	30x \$750 (for work on site in curriculum		\$22,500	<i>\$22,500</i>
	implementation and training)			
	Content Speakers for Trng. for DELTA Teacher	\$1,200	\$1,200	\$1,200
	Leaders and Curriculum Developers	\$1,200	\$1,200	\$1,200
	Total:	\$22,500	\$22,500	\$22,500
Travel	Mileage for Project Coordinator	\$1,100	\$1,100	\$1,100
Tiavei	Presentation at Mtgs/Conf./etc.			
	Calif. Science Teachers Association, state Env. Educ	\$1,000	\$1,000	\$1,000
	confs.	#2 100	40.100	00.100
To 4 a l	Total	\$2,100	\$2,100	\$2,100
Total		\$96,200	\$96,200	\$96,200
Indirect @		\$5,897	\$5,897	\$5,897
6.13				
Total:		\$102,097	\$102,097	

2. Cost Share

Cost share for the project will grow as project develops. Cost share will be a combination of in-kind and cash. Agency, organizational and educational personnel will be enlisted to assist with project and records will be kept for in-kind contributions. Key cost share items are as follows:

A. V	
2 days substitute time for DELTA Teachers Leaders at	2 days x appr. \$100 per day x thirty teachers per year=
schools sites and teacher curriculum developers	\$6000 per year or \$18,000 for 3 yrs. total
Project Director for additional days of project support	10 @ \$350= \$3500 per year or \$10,500 total
Additional agency, organizational personnel to work on	5 @ \$750 each = \$3500, or \$10,500 over total grant
development of Delta Curriculum and sponsors of action	period

project who serve without stipend	
TOTAL Cost Share	\$13,000 per year or \$39,000 over 3 years.

H. Compliance with Standard Terms and Conditions

The San Joaquin County Office through the operation of activities proposed in present project agrees to comply with all state and federal terms.

I. Literature Cited

- Lesson ideas for the Delta Studies Curriculum will be derived primarily from the
 following curricula that received high ratings in the California Environmental Education
 Compendia (see Appendix A). Additional curriculum development resources will be identified as
 a result of curriculum development process.
- Clymire, Olga. A Child's Place in the Environment series. Sacramento:
 California Department of Education, 1996–98. Grades 1-6 focus. Includes grade level units entitled: Respecting Living Things (Unit 1); Protecting Soil (Unit 2); Preserving and Restoring Ecosystems (Unit 3); Caring for Aquatic Systems (Unit 4); Conserving Natural Resources (Unit 5); Achieving a Sustainable Community (Unit 5).
- Clymire, Olga. California CLASS Project. See Appendix C
- Department of Water Resources. 1991. All About Water. Primary Grades. Includes activities with five chapters: How Does Water Get To Us? How Much of the Earth's Water Can We Drink? How Do We Use Water?, What is Happening to Our Water?, and How Should We Take Care of Our Water?
- University of California, Berkeley, Lawrence Hall of Science. Great Explorations in Math and Science (GEMS), *Rivercutters*. Introduces upper elementary students to erosion, pollution, and sequencing of geological events.
- California Department of Fish & Game. *Project WILD and Aquatic Project WILD*. K-12 focus. Interdisciplinary program based upon exploration of wildlife and aquatic species.
- The Watercourse and Council for Environmental Education. Montana State University. Project WET. K-12 focus. Promotes awareness, appreciation, knowledge and stewardship of water resources.
- Stokely, K. Adopt-A-Watershed. Hayfork, CA. K-12 Focus. Integrated science curriculum
 utilizing local watershed as focal point for field studies, restoration projects and community action
 projects.
- California Department of Education. California Academic Standards. 1996-99.

Attachment C

Task	Hrs.	Salary/ Benefits	Service Con- tracts	Travel	Over- head	Total
Year ONE						
Task 1: Delta Studies Curriculum Development (includes cost share)	2230	38,900	10,500	500	10148	60048
Task 2: Delta Studies Kits	1114	19,600	10.500	1500	10449	42049
Total: Year ONE						102,097
Year TWO						
Task 1: Implementation of Delta Studies	2037	42,500	20,500	1100	22,497	86,597
Curriculum in 30 Targeted Schools with			1			
Assistance from DELTA Teacher Leaders			1			
Task 2. Assistance at 15 Schools for Action			15,500	•		15,500
Projects				1	<u> </u>	_
Total: Year TWO						102.097
Year THREE			,			
Task 1: Implementation of Delta Studies	2037	42,500	20,500	1100	22,497	86,597
Curriculum in 30 Targeted Schools with						
Assistance from DELTA Teacher Leaders				1		
Task 2. Assistance at 15 Schools for Action			15,500			15,500
Projects				-		
Total: Year TWO					···	102.097
Total for Project						306,291

Quarterly Project Budget

(SJCOE will coordinate with funders to provide continual funds for project activities)

2000-2003 (Three Years of Project)

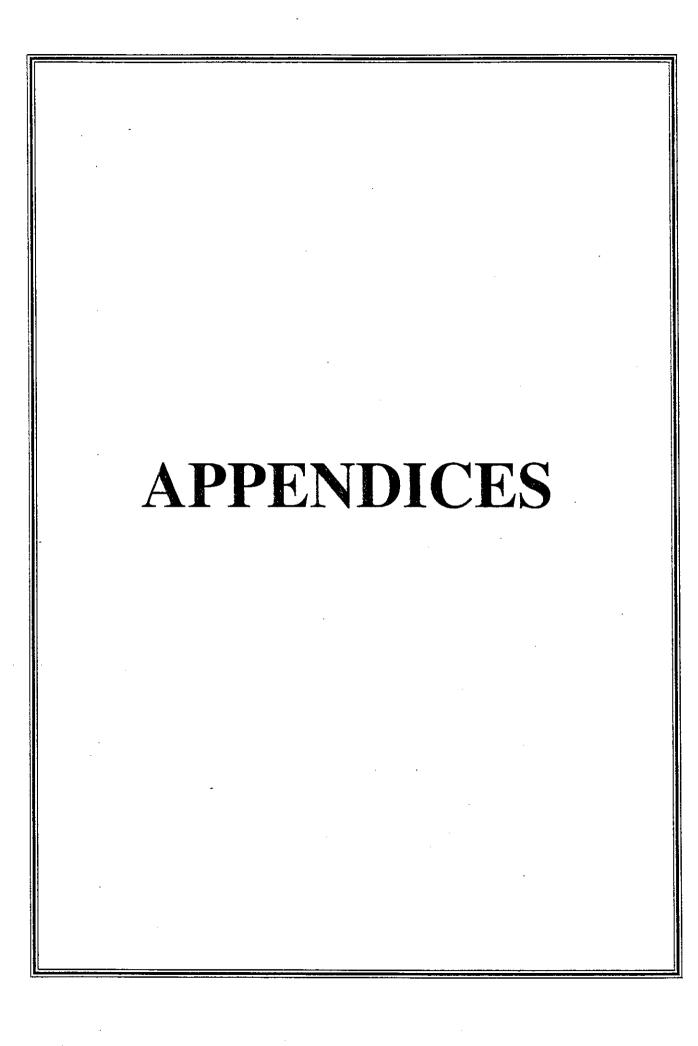
Year	Jan-	Apr-	Jüly-	Oct-	Total:
	Mar.	June	Sept.	Dec.	
Year ONE All Tasks	25,524.	25,525.	25,524.	25,524	102,097
Year TWO All Tasks	25,524	25,525	25.524	25.524	102,097
Year THREE All Tasks	25,524	25,525	25,524	25,524	102,097

7. Program Income \$	k. TOTALS (sum of 6i and 6j)	j. Indirect Charges	i. Total Direct Charges (sum of 6a-6h)	h. Other	g. Construction	f. Contractual	e. Supplies	d. Equipment	c. Travel	b. Fringe Benefits	a. Personnel	6. Object Class Categories per year (1)		5. Totals	4.	3. Year 3	2. Year 2	1. Year 1 \$	Envir. (a) Educ. (b)	Grant Program Catalog of Federal Function Domestic Assistance	
-	₩.										49	(2)	SECTION B - BU	€				49	(c) No	ted Unobligat	SECTION A - E
\$	\$ 102,097	5,897	96,200	101	-0-	22,500	11,400	-0-	21,000	6,000	\$ 53,000	GRANT PROGRAM, FUNCTION OR ACTIVITY (3)	SECTION B - BUDGET CATEGORIES	\$ 306,291		102,097	102,097	\$ 102,097	(d) (e)	-	SECTION A - BUDGET SUMMARY
€	₩										es			\$ 39,000		13,000	13,000	13,000	(f)	New or Revised Budget	
\$ 1-01	\$ 102,097	5,897	96,200	101	101	22,500	11,400	101	21,000	6,000	53,000	(5)		345,291		115,097	115,097	115,097	(g)		

Authorized for Local Reproduction

Standard Form 424A (Rev. 7-97)
Prescribed by OMB Circular A-102

	SECTION	SECTION C - NON-FEDERAL RESOURCES	ESOURCES		
(a) Grant Program		(b) Applicant	(c) State	(d) Other Sources	(e) TOTALS
8. San Joaquin County Office of	Ed. In-Kind	\$ 3,500	49	\$	\$ 3,500
9. District Teacher Substitutes				6,000	6,000
10 Agency, Organization Personnel	el - In-Kind			3,500	3,500
1,					
12. TOTAL (sum of lines 8-11)		\$ 3,500	\$9	\$ 9,500	\$13,000
	SECTION	SECTION D - FORECASTED CASH NEEDS	SH NEEDS		
	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	\$ 102,097	\$25,524	\$25,525	\$ 25,524	\$25,524
14. Non-Federal	13,000	3,250	3,250	3,250	3,250
15. TOTAL (sum of lines 13 and 14)	\$ 115,097	\$28,774	\$28,775	\$ 28,774	\$28,774
SECTION E - BUI	GET ESTIMATES OF	SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BAI		ANCE OF THE PROJECT	
(a) Grant Program			FUTURE FUNDING	FUTURE FUNDING PERIODS (Years)	
		(b) First	(c) Second	(d) Third	(e) Fourth
16. Delta Studies Program		\$102,097	\$102,097	\$ 102,097	₩
17.					
18.					
19.					
20. TOTAL (sum of lines 16-19)		\$102,097	\$102,097	\$ 102,097	↔
	SECTION F	JDGET INI	NOITAMRO:		
21. Direct Charges:		22. Indirect Charges:			And the first section of the section
\$306,097 (3 years) 23. Remarks:			\$17,691	(3 Years)	
FO. I will dive.					-



APPENDIX A

ENVIRONMENTAL EDUCATION COMPENDIA

Curriculum materials were evaluated by environmental educators throughout the state using an evaluation tool developed by the California Department of Education in collaboration with other state agencies. The goal of this evaluation is to identify those curricula which align with California education frameworks and are accurate and comprehensive in their presentation of issues related to the following topics.

Curricula were evaluated for appropriateness at four grade-group levels: K-3, 4-6, 7-9, and 10-12. Each piece was evaluated by a team of educators who have teaching experience at the target grade-group level. Multi-level curricula were evaluated at each grade level that they encompassed, resulting in some curricula being evaluated by four different evaluation teams.

Only those material which received an overall grade of B- or above are included in the main part of this document. Curricula with lower average scores and supplemental material not deemed curricular in design are listed in the appendices.

These publications provide information about and evaluation of environmental education curricula. The following compendia are available to schools and available from:

AIR QUALITY

Air Resources Board
Office of Communications
2020 L Street, 5th floor
Sacramento, CA 95814

ENERGY RESOURCES

California Energy Commission Public Education 1516 Ninth Street, MS-29 Sacramento, CA 95814-4219

HUMAN COMMUNITIES

California Energy Commission Public Education 1516 Ninth Street, MS-29 Sacramento, CA 95814-4219

INTEGRATED WASTE MANAGEMENT

California Integrated Waste Management Board 8800 California Center Drive Sacramento, CA 95826

NATURAL COMMUNITIES

State Water Resources Control Board Office of Legal & Public Affairs 901 P Street Sacramento, CA 95814

WATER RESOURCES

Department of Water Resources Publications, Room 338 1416 Ninth Street/Box 942836 Sacramento, CA 94236-0001

APPENDIX B



Abstract of A Child's Place in the Environment Series

The purpose of the curriculum guide, "A Child's Place in the Environment", is to provide elementary school teachers with an example of an interdisciplinary, thematic, environmental education program.

Goal

The goal of A Child's Place in the Environment is to encourage students to become environmentally literate and active. These students would value their environment, respect all life forms, understand the basic ecological principles which support our planet, and live an ecologically responsible life-style.

Themes

Each grade-level unit is designed around four major themes:

- Valuing the environment—providing opportunities for students to develop a feeling of appreciation and respect for the environment
- Systems and interactions—enabling students to acquire an understanding of the ecological concepts as they practice thinking and problem-solving processes
- Patterns of change—challenging students to recognize the ways their environment changes
- Conservation—encouraging students to act responsibly toward the environment through school and community enhancement projects and personal action

Topics

The six grade-level units of A Child's Place in the Environment are:

Grade 1: Respecting Living Things

Grade 2: Protecting Soil

Grade 3: Preserving and Restoring Ecosystems

Grade 4: Caring for Aquatic Systems

Grade 5: Conserving Natural Resources

Grade 6: Achieving a Sustainable Community



Abstract of A Child's Place in the Environment Series

Curricular Components

Each unit consists of approximately 20 sequential lessons that provide experiences for a variety of student learning styles and incorporate cooperative learning groups. The lessons in each unit are linked by a story line, guiding students through environmental awareness, understanding, thinking and problem-solving processes, and action projects.

Student Outcomes

Students become dynamically involved in specific environmental science activities suited to their developmental levels. Their enhanced literacy provides them with a deeper understanding of basic ecological principles and with valuable insights into living ecologically responsible life-styles that reflect respect for all life forms.

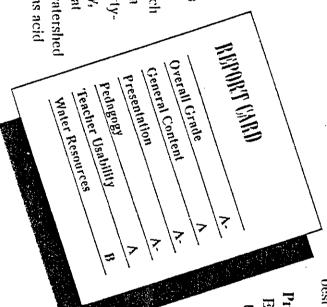
For more information contact:
Olga Clymire
Environmental Education Consultant
1152 South Main St.
Lakeport, CA 95453
707-263-7249
FAX 263-6262
olganc@pacific.net

California CLASS Project

California Department of Education Bureau of Publications, Sales Unit P.O. Box 271 Sacramento, California 95812-0271 (800) 995-4099

\$28.00. 1984. 374 pages.

The "California CLASS Project" is an interdisciplinary program that integrates science, social science, and language arts. Students are presented with real-life environmental issues facing California, which are explored and discussed through a variety of interactive activities. Thirty-nine activities revolve around energy, hazardous substances, wildlife habitat management, wetlands, forest and watershed management, and other issues such as acid rain and solid waste.



SIMMOO

General Content

"Outstanding linkage with land use planning issues." "One of the best I've seen: great background, diagrams, lesson plans."

Presentation

Easy to use format. "Illustrations need improvement." "Some of the overheads are outdated."

Pedagogy

"Aligned to the state frameworks." "Good discussion-making and genuine biological inquiry." "Emphasizes cooperative learning, critical thinking and problemsolving skills."

Teacher Usability

A very useful supplement.

Specific Content on Water Resources

"Discusses socioeconomic and environmental quality issues... although water is only a small component of the 'CLASS' curriculum." "A thorough treatment of wetlands." "Material is specific to California."

DISCIPLINE EMPHASIS

History/Social Science
Health
Mathematics

Visual/Performing Arts
Language Arts
Industrial/Vacational Ed.
Foreign Language

128

SPONGE THE EARTH'S

OVERVIEW

Surdents will:

Teacher Instructions

UPJIT V - Lesson 6

Students study watershed and map dealnage patterns of their school grounds

purifying water; predict and map rainwater drainage patterns of their school and home, then compare theh

observe a demonstration on how soil in a watershed acts as a synage, liftering and

prediction to the school dridingse patterns; determine the distings in their community's watershed; and compare the school ground watershed to the community watershed.

AT A GLANCE

ADVANCE PREPARATION:

Follow preparation directions in Setting the Stage 14 and 1b.

Prepare a map of the school grounds. Use the one from the previous lesson, "Who Planted the Maple on Elm Street," If available. Make copies for all students.

Obtain a topographical map of your area (see Dipping Desper) and make a transparency of

BURATION: 3 class perieds
(IRO)UPINGS: whole class and small groups
(IRO)UPINGS: whole class perieds
(IRO)UPINGS:
(IRO)UPINGS: whole class perieds
(IRO)UPINGS:
(IRO)UPINGS: TRÂNSPARENCY:

A · A Small Rund Warrshed

A · A Small Rund Warrshed

CHOSS CURRICULINI COMMECTION: art, peography, mathematics

FROCESS SKILLS: observing, communicating, comparing, organizing, relating, inferring area, and the following:

AUCVIIOI'VIL

aquifer, erosion, filter, groundwater, percolation, nmoff subsoil, watershed, water table

-277-

BACKGROUND INFORMATION

Definition of a Watershed

(opposite the spont), and observe the eroded soil wash away into the dish pan. Add more soil, if necessary, to fill the catton half full. Place a 4" x 8" sponge

on top of the soil. Press the sponge

poured on the soil. Pour the water on the soil at the blunt end of the carton

would happen when a cup of water is

acre of land which drains into a pond). They can also be as large as the Mississippi River watershed, which covers over 1,234,000 square miles (3,208,400) square kilometers) and Instreams. Watersheds can be very small (e.g., an acre of land which drains into a pond). They water aquifers and channeling it into rivers and water to a draininge system or stream. It supplies us with water by holding rainwater in ground-A watershed is the entire area which contributes

Functions of a Watershed

Picture a watershed as the entit's sponge, filtering as well as absorbing and storing water. As water percolates through the soil in the watershed and futor the water table, the soil filters some of the impurities. A functioning watershed must allow water to soak into the ground. Forest solls have a great capacity for holding water and, therefore, serve as natural regulators of

Consequences of a Damaged Watershed

fairits, houses, and other property. Eroded soft chokes waterways, reducing the amount of water the stream or lake can contain. This Its cover, decreasing its water holding capacity.
If the majority of the land in a watershed its paved
or not covered with vegetation, it cannot absorb
the excess rainful and water will run off rapidly. This results in floods and erosion, and decreases the available groundwater supply during the dry months of the year. Hoods destroy creates problems for fish as well as people. Uncontrolled logging or fire can strip land of

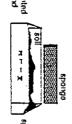
SETTINGTHESTAGE

1. Discuss the definition of watershed with the class (see Background Information). Perforth the following activities:

n. Demonstrate how a watershed functions

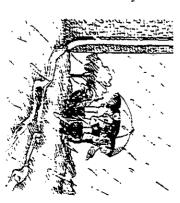
Lay a milk carlon horizontally on the table with the spout pointing upward. Carefully cut and remove the top side, including the spout. Fill the carton half full of soil. Place a dishpan under the carlon to catch the runoff. Till the following two experiments: as the earth's sponge by conducting the carion at a 45° angle towards the spout

> blunted end down firmly. Ask students to predict what would happen when you pour the cup of water on the sponge. As you till the carron and pour the water, observe minimizing the runoff the sponge absorbing most of the water, X T T K Sporter



b. The concept of how a watershed filters the water can be illustrated using dirty water and a flower pot. Block the hole in the bottom of the flower pot with a hall of cotton, which takes the place of subsoil. Place a orie lach layer of charçoal on the bottom and add soil. Place a clear cup or glass under the pot. Slowly pour leup of dirty water into the pot, The water running out the bottom of the pot should be rela-

Show the transparency and review the defini-tion of a watershed. Discuss the role and Importance of a watershed (see Background Information).



Ask students to predict what

APPENDIX D

Concepts and Subconcepts of "A Child's Place in the Environment" Series

Unifying Concept: People are dependent on the Earth's dynamic natural systems and can participate in responsible actions to enhance and protect the quality of the environment.

Grade-Level 1 Concept: We show our respect for living things by caring for them and their surroundings.

Subconcepts:

- 1. Living things share our environment.
- 2. Living things have needs.
- 3. Living things are interdependent.
- 4. People can choose to care about and protect living things.

Grade-Level 2 Concept: We conserve soil because it supports life.

Subconcepts:

- 1. Soil is made up of living and nonliving things.
- 2. Soil supports life, and life enriches soil.
- 3. People depend on soil.
- 4. People can choose to enrich and conserve soil.

Grade-Level 3 Concept: We restore and preserve ecosystems because they sustain life.

Subconcepts:

- 1. In an ecosystem living things depend on each other and on nonliving things.
- 2. Living things have adapted to their habitats.
- 3. Ecosystems change because of natural causes and human alterations.
- 4. People can choose to respect living things and help to restore or preserve ecosystems.

Concepts and Subconcepts of "A Child's Place in the Environment" Series

Grade-Level 4 Concept: We strive to balance our use of water to meet the needs of all living things.

Subconcepts:

- 1. Water cycles through living and nonliving things.
- 2. Water is essential to all living things.
- 3. The ways people acquire and use water affect living things.
- 4. People can choose to conserve water, maintain or improve its quality, and protect specific bodies of water.

Grade-Level 5 Concept: We conserve natural resources because they are necessary to the survival of living things.

Subconcepts:

- 1. Living things depend on natural resources—air, water, soil, sunlight, minerals, plants, and animals.
- 2. The homes of wild animals and human beings are made from natural resources.
- 3. People use and affect natural resources.
- 4. People can choose to conserve and protect natural resources.

Grade-Level 6 Concept: To achieve sustainable communities, we participate in stewardship practices that reflect caring, understanding, and respect for the natural and human-built environments.

Subconcepts:

- 1. Healthy ecosystems are biologically diverse, have complex interrelationships, and are sustainable.
- 2. Some components, relationships, and energy sources in human communities are similar to those that exist in ecosystems.
- 3. Human communities affect the quality of natural and built environments.
- 4. People can choose to participate in responsible actions to promote sustainable human communities and enhance or protect the quality of the environment.

Unifying Concepts of Environmental Education (cont'd)

PHOCESS PHOCESS Environmental Systems and Interactions of Interpretation for Interpretation Interactions of Interpretation Interactions of Interpretation Interactions of Interpretation Interactions of Interpretation Interactions with Interpretation Interpret					
CONTENT NATURAL ENVIRONMENT Natural Systems and Interactions ERING ERING Environmentally aware citizens cultivate in themselves and others a deep appreciation for natural systems and personal interactions with the natural environment. ECIATION ECHICATION Individuals understand the relationship between the living and non-living components CEPTS Science: Living Things, Energy, Ecosystems, Matter. Science: Living Things, Energy, Ecosystems, Matter. Science: Living Things, Energy, Ecosystems, Matter. Human Alterations to Natural Systems Systems Members of sustainable human communities value the natural environment at recognize human hidrs utitinate dependence upon tenewable and non-renewable resources. Interest Science: Indigental Interactions with renewable and non-renewable resources. Interest Science: Science: Indigental Interactions with renewable and non-renewable resources. Interest Science: Science: Indigental Interactions with renewable and non-renewable resources. Interest Science: Indigental Interactions with renewable and non-renewable resources. Human Alterations to Natural Systems Members of sustainable human communities value the natural continuent and recognize value the natural series of sustainable human communities value the natural continuent and recognize value the natural series of sustainable human communities. Members of sustainable human communities value the natural series of sustainable human communities va		Informed citizens influence the development of a sustainable global community through individual and collective actions, civic and organizational responsiveness, lifestyle choices, cultural sensitivity, career selection, regulatory and statutory processes, and economic practices. Illstory and Social Science: Civic Values, Rights and Responsibilities, Economic Literacy, Critical Thinking Skills, Participation Skills; Science: Science, Technology and Society.	Members of sustainable human communities learn from past experiences, acknowledge human limitations, anticipate changes, and develop innovative systems to conserve resources and promote the vitality of both the natural and built environments. History and Social Science: Ethical Literacy, Critical Thinking Skills, Historical Literacy, Economic Literacy; Science: Geology and Natural Resources, Science, Technology and Society.	Individuals take appropriate, knowledgeable actions to restore, preserve and protect the integrity of natural systems and interactions. Itistory and Social Science: Illstorical Literacy, Ethical Literacy; Science: Ecosystems, Geology and Natural Resources.	TAKING RESPONSIBLE ACTIONS TOWARD THE ENVIRONMENT
CESS CESS CESS Environmentally aware citizens cultivate in themselves and others a deep appreciation for natural systems and personal interactions with the natural environment. ECIATION HE RONMENT California Curriculum Framework References: Sciences: Geology and Natural Resources, Living Things, Ecosystems. BUILT ENVIRONMENT Human Alterations to Natural Systems Members of sustainable human communities value the natural environment and recognize funnankind's ultimate dependence upon renewable and non-renewable resources. History and Saclal Science: Geographical Literacy: Sciences: Geology and Natural Resources, Living Things, Ecosystems.		Individuals, communities, and societies understand and honor the symbiotic relationship between the natural and built environments such that a sustainable global community is created. History and Social Science: Civic Values, Rights and Responsibilities, Sociopolitical Literacy, Participation Skills.	Humans understand how they after the natural and built environments. As human populations increase, their impacts on the global environment are more pronounced. History and Social Science: Historical Literacy, Geographic Literacy; Science: Geology and Natural Resources, Science, Technology and Society.		UNDERSTANDING BASIC ENVIRONMENTAL CONCEPTS
NATURAL ENVIRONMENT Natural Systems and Interactions Systems BUILT ENVIRONMENT Human Alterations to Natural Systems		An individual's quality of life and attitude toward the environment depend upon the distribution and quality of natural resources, which may be regulated by laws and influenced by local interests, cultural values, political climate, and international relations. Illitory and Social Science: Sociopolitical Literacy, Cultural Literacy, Constitutional Heritage, National Identity.	Members of sustainable human communities value the natural environment and recognize humankind's ultimate dependence upon renewable and non-renewable resources. History and Saclal Science: Geographical Literacy; Science: Geology and Natural Resources, Living Things, Ecosystems.	Environmentally aware citizens cultivate in themselves and others a deep appreciation for natural systems and personal interactions with the natural environment. California Curriculum Framework References: Sciences Living Things, Ecosystems, Oceanography.	FOSTERING AWARENESS AND APPRECIATION OF THE ENVIRONMENT
	<u> </u>	PERSONAL ENVIRONMENT Citizens' Roles, Responsibilities, Choices, and Actions	ENVIRONMER Alterations to Na	NATURAL ENVIRONMENT Natural Systems and Interactions	PROCESS

APPENDIX E



POINT OF VIEW ON ENVIRONMENTAL EDUCATION FROM THE CALIFORNIA DEPARTMENT OF EDUCATION

The following position statement from the California Superintendent of Public Instruction was prepared in the spring of 1990 and distributed to all schools, school district offices, and county offices of education.:

It has been 20 years since campus centered demonstrations first focused the country's attention on environmental issues. Now, on the eve of a global celebration of that historic first Earth Day, environmental awareness is dramatically different. Students learn about it in school, hear it discussed at home, see it on television, and read about it in newspapers. It invades debates on everything from good government to responsible consumerism; triggers heated arguments about jobs, health, and individual freedom; and increasingly governs what we wear and eat and even how we move from place to place. The word, "environment," has become embedded in the vocabulary. It appears in the language of legislators and the rhetoric of conservationists and economists alike. It guides the plans of engineers and the blueprints of architects. No one in society is immune to its pervasive influence... or its importance. But awareness, alone is not enough. The omnipresence of the word, "environment," in our language does not necessarily equate to an understanding of how its basic principle regulate or constrain the life cycles of everything from butterflies to eagles and marshes to mountains. One person's awareness of the problem may simply be another's anguish over its impact.

Comprehensive efforts must be made to bolster recognition with understanding and appreciation. More must be done to teach the basis ecologic principles that underpin all natural systems and sustain the resources they can provide an enlightened society, in perpetuity. There is no better place than ours schools nor a more critical time than now to embark on a new course toward those essential objectives. These goals are best reached through a restructuring of and more vigorous commitment to environmental education. When Earth Day was celebrated on campuses and town squares across the nation, the major concerns were air and water fouled with contaminants, fields and produce tainted with pesticides, and forest and fuel resources overexploited. Society still struggles with these concerns, and it also confronts vastly more sobering ones as it approaches a new century. Scientific evidence indicates that the earth's life sustaining atmospheric canopy is being altered. One kind of pollution erodes the ozone shield and lets in too much cancercausing solar radiation, while another traps the earth's reflected heat and turns the planet into a global greenhouse. The environmental issues of the nineties, and beyond, have become planetary pollution and global survival.

More than ever before, classrooms must emphasize basic principals that govern the planet's resources. No species can exceed the limits of life-support systems that sustain it. That applies equally to humans, whose unique ability to alter and manipulate the environment it share with so many other life forms carries special responsibilities. Students must be taught that the way they live, shop, and even play can mean the difference between survival and extinction for other species with whom they share essential life-support systems like pure air, clean water, and sustainable nutrients. They must value the linkage of such interdependence and understand that when the chain breaks for one species, it can unravel for all.

As they are infused with knowledge and understanding of such immutable laws of nature, students are less likely to accept society's current throwaway mentality that fosters excessive exploitation of raw resources for this generation and burdens the next with overflowing waste sites. Brought face to face with such concepts, they are unlikely to believe there is always another river to dam, another forest to strip, or another species to exterminate. Instead of spending the next generation's rightful resource inheritance, they will have been schooled in how to use, and reuse, their own more carefully. They will understand the inevitability of consequences and the redeeming value of considering them before they act. With consistent reinforcement of such underlying principles will come

understanding that environmental problems often are just valuable resources out of place. Industrial solvents dumped to pollute precious underground water systems could, instead, be reclaimed and sold for profit. Once stripped of their poisonous heavy metals, mountains of sludge from sewage plants could renew depleted farmland.

With dedication, a vigorous commitment of resources and a measure of good fortune, a new generation of environmentally conscious citizens will appreciate the value of sustainable harvests and loathe the liability of designed obsolescence. They will know how important it is to look before they leap, think before they act. There will be commitment to fairly balance tradeoffs when negative impacts are unavoidable and recognition that today's delayed local response can become tomorrow's global repercussion.

Creatively crafted and fairly applied, a continuing and comprehensive program of environmental education will teach the value of persistence and discipline; encourage an entire generation to take responsibility for its actions and choices; and energize them to act rather then react. The benefits need not be constrained solely to more enlightened environmental thinking, but they are equally applicable to good government, citizenship, parenting, and individual productivity.

Caring enough to learn, learning enough to know, and knowing enough to act will position students to effect a more responsible stewardship over their inheritance and create a more peaceable, productive, and sustainable existence for all species.

While such goals and accomplishments are easier to establish than to reach, they can be a natural consequence of consistent attention to basic ecologic principles. Properly reinforced, they will be keystones to lifetimes of awareness, understanding, and enlightened action.

THE GOALS of ENVIRONMENTAL EDUCATION

Goal 1 - Foster awareness of the interdependence of all life and the need to have values and behavior compatible with a sensitivity to and concern about the total environment.

We and others we know exhibit sensitivity and compassion at some times and reactive and destructive behavior at others. We must strive to teach that we all are responsible for the environmental consequences of our choices, public and private. Schools can help students become more aware of self and others by bringing them together in quality natural settings to bridge the gap between both themselves and natural systems that is an unwanted by product of an increasingly technological world. Such experiences, reinforced by thoughtful classroom work, bolster understanding and appreciation of the linkages between natural and human-made environments and their place in and value to society.

The concept of interdependence can be taught effectively as small groups of students work together on projects they help select, design, and complete. With the teacher filling the role only of a team member who guides and facilitates the learning experience, students master working together on real issues and develop group as well as individual problemsolving skills. This process emphasizes development of learning skills in the community and integrating such experiences so that students learn to perceive and relate to the natural, social, and technological environments as different but linked systems.

Goals 2 - Develop knowledge about the biophysical environment--what happens when humans use and abuse nature--and about constraints to and opportunities for effective change.

Students increasingly need a base of knowledge about ecologic principles in order to make sound decisions as citizens. The Science Framework for California Public Schools (1990) contains many of these concepts but might be expanded to incorporate such others as:

- 1. History of the environment, both natural and human
- 2. Evidence of human-induced and natural change
- 3. Guiding change through forecasting and designing alternative futures; the role of government and other entities in planning; and tactics and strategies for intervention
- 4. Impacts of human cultural behavior on the environment, including pollution, habitat loss, and species extinction

The underlying cause of environmental problems often is the result of the collective behavior of individuals. Traditionally, indigenous societies live in harmony with their natural support systems. But many of the cultural practices of industrialized society exceed the capacity of the environment to replenish, cleanse, or recycle. Yet our major economic, social, and ideological systems remain geared to levels of resource consumption that are increasingly impossible to sustain.

Students need to know more about new ideas and practices that are ecologically sound and how public acceptance of them can be won. Other cultures and their relationship to nature and its resources should be studied for clues to understanding the principles that govern natural systems and the means of adapting them to improve the design of systems of human origin.

Goal 3 - Help students learn to make decisions and take actions to solve current environmental problems and prevent new ones from developing.

Students need problems-solving skills to help them cope with an era marked by the explosive growth of new information. To become more responsible for their own learning, they need to know how and where to get that information and use it wisely. They need to be able to search out a wide variety of issues and the likely ecological and cultural implications of suggested solutions, including knowing how to probe into and correctly analyze environmental issues to determine the best corrective steps.

Most environmental problems arise when only short-term or parochial interests are considered. Students should be taught how good-faith negotiations and knowledge about tradeoffs help ensure that decisions which exploit or impact natural resources serve longer and wider interests. Classroom experience with decision "trees," cost/benefit analysis, case studies, and simulations will enhance abilities to negotiate and work cooperatively to ensure that future or other populations are not forced to suffer the consequences without sharing the benefits of current environmental decisions.

Citizenship development involves more than learning content or concepts. It evolves best when students graduate to it through hands-on experience with such real-life issues as environmental problems or controversies. In this way they learn best the politics, constraints, tradeoffs, and linkages of issues and just how much individuals or groups can do to effect them. Cumulatively, students involved in those processes learn leadership skills like advocacy, facilitating, and organizing and how to use a diversity of experiences and approaches.

Investigating real problems helps young people take formative steps toward critical thinking by learning how to ask, think, and act for themselves. Quality environmental education programs enhance that essential form of reasonable reflective thinking when they center the curriculum on the lives and communities of their students. Through being taught to validate and analyze their own circumstances, students recognize there are no perfect solutions. Often, they learn that not all of the facts necessary for good decisions are available when most needed. Instead, they discover that the best they may be able to do is to find and evaluate sound reasons for taking action and consider all likely alternatives and potential impacts. Even then they must learn to live with a degree of uncertainty about the consequences and act accordingly to their best judgment.

Recommendations for Action

1. Provide Thematic Instruction Throughout the Curriculum.

Environmental education is taught thematically in every classroom at all grade levels. All students participate in environmental studies and projects. Students participate in experiential learning activities that are true to ecological principles and the environmental education concepts of the core curriculum, particularly in science and history-social science. Literature-based programs include books with environmental topics, which address a variety of themes and deepen student understanding of concepts found in the Science Framework for California Public Schools (1990).

- 2. Conduct Ecology Lessons in Built and Natural Settings. Environmental education is conducted in all school settings: indoors and outdoors, and at suburban, urban, and rural schools. Every child has a residential outdoor science school experience in fifth or sixth grade. Experiential learning through field studies at each grade level contributes to the understanding of diverse ecosystems and values structures.
- 3. Value Lifelong Learning About the Environment. Students and staff members value the lifelong process of educating themselves about local and global ecological issues as they relate to society and self. Career exploration in the environmental sciences is provided to all students.
- 4. Participate in Ecologically Responsible Action Projects. Principals and teachers serve as team members and role models for the students; provide the opportunities for students to be responsible for ecologically sound classrooms and schools; and participate with the students in community action projects.
- 5. Emphasize he Higher Order Learning Processes and Educate the Whole Child. Students apply basic learning and communication skills and higher order thinking processes in the context of current community issues. Environmental studies and action projects involve the whole child in cognitive and affective learning experiences, nurturing each student's intellectual, social, physical, and emotional well-being.
- 6. Provide Development Opportunities for All Staff Members. To effect and ecologically sound school, all staff members must understand the ecological rationale which underlies their individual responsibilities. Teachers must be familiar with environmental education curriculum materials to choose wisely those that best suit the unique characteristics of their student population and their bioregion. Custodians must understand the crucial nature of their impact as role models for reusing and recycling materials used at the school and developing innovative programs to suit the needs of the school. Classified staff members contribute their initiative, enthusiasm, and interest to classroom and schoolwide programs, sparking increased interest in the students' desire to understand ecology. Administrators set the tone for the school and the district; their leadership creates a cohesive team effort where all players pull together to improve conditions and programs in the school.
- 7. Match the Media to the Message. The thinking processes a student uses' to move from awareness to understanding to action can be stimulated by specific events and activities. Outdoor experiences, such as week-long residence at an outdoor science school, assist the child in experiencing all three processes, while activities of shorter duration, such as handson laboratory activities or field investigations, often provide exceptional reinforcement of one stage in particular.

These are but some of the ways to forge an enlightened, effective program of environmental education. Others could be keyed to increasing the basic awareness of the subject through the use of films, literature, current events, bulletin boards and even school

1555.00

assemblies, at all grade levels. Helping students develop a better understanding of environmental topics and issues can be augmented through an outdoor curriculum that engages preschool, kindergarten, and elementary students in actual field observations and investigations on familiar territory, the school grounds, or nearby local park. Such firsthand experiences need to become more sophisticated for higher grade levels. For fifth and sixth graders, for instance, more useful application of the basic principles of ecology would be better reinforced with a more concentrated dose of applied learning at a weeklong outdoor science residency. Such an experience for middle grades could be backed up by ongoing research at a field study site. High school students could further sharpen such acquired skills by serving as cabin leaders for outdoor resident science schools, conducting their own field research, or even surveying local citizens about environmental problems and attitudes.

The graduation from awareness to understanding culminates when the knowledge and commitment acquired prompts responsible actions toward the environment. When each classroom in every school is based on ecologically sound principles, students are more likely to be both directly involved in and committed to useful, responsible projects that can and should carry over to enlightened community action.

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APPENDIX F

Delta Studies Program: San Joaquin County Schools



Ten Standards-Based Units K-12 themed to CALFED Goals on Delta with Action Projects

Lesson loas Education Comontal

60 Elementary,
- Middle and
High Schools
in San Joaquin County
30,000 students

acher + Agency + Organizations

Guindlum Developers

Delta Resource Center

Kits of materials, software, resources at San Joaquin County Office

Delta Educators for Learning, Teaching, and Action D.E.L.T.A. Teachers 1 per each targeted site



Kits for teachers to use in schools



Water Education FOUNDATION

71." K Street, Suite 317 Sacramento, CA 95814 Phone: (916) 444-6240 FAX: (916) 448-7699 Internet: www.water-ed.org

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Gary Hansen Colorado River Indian Tribes

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Frances Mizuno San Luis & Delta-Mendota Water Authority

Anson Moran

Suzanne Redfern Redfern Ranches Inc.

Anthony Saracino Groundwater Resources Association of California

Jesse Silva Imperial Irrigation District

Gary Weatherford Weatherford & Taaffe, LLP

William R. Gianelli President Emeritus May 5, 2000

Ms. Judi Wilson Director, Mathematics and Science San Joaquin County Office of Education P.O. Box 213030 Stockton, CA 95213

Dear Ms. Wilson:

This is a letter of support for the grant application of the San Joaquin County Office of Education (SJCOE) to establish a Delta Education program.

The Water Education Foundation has worked with the SJCOE on many occasions to help school children understand the importance of water in their lives and to act to conserve water and protect the quality of the water resources in their communities. We have presented many teacher training workshops in the county and provided teachers with water education teaching materials. The County Office's commitment to resource education is commendable and we look forward to working with you in the future.

In regard to this proposal, the Water Education Foundation will commit to conducting workshops and providing additional water education school programs for teachers. As Education Director for the Foundation, and an educator of 30 years of science education experience, I will also serve in an advisory capacity to the curriculum committee and help train the DELTA teachers in water issues.

We hope you are successful in your application for a CALFED grant and will assist you in whatever way we can.

Sincerely,

√udy Wheatley Education Director



UNIVERSITY OF THE PACIFIC

School of Engineering

May 10, 2000

Ms. Judi Wilson, Director, Math & Science San Joaquin County Office of Education P.O. BOX 213030 Stockton, CA 95213

Dear Ms. Wilson,

It is my pleasure to offer this letter in support of your Delta Studies Program. Your proposal offers unique opportunites for primary and secondary students. I support discovery-based approaches in science education. Exposing your students to science using waterways near their schools is one way to fully take advantage of our location near the Sacramento-San Joaquin River Delta and its tributaries. It would be my pleasure to assist you and your collaborators with developing the details of your curriculum.

Our research group has been studying the Calaveras River for several years now. I feel we can significantly contribute to your project. In addition, I feel there are ways that you and your students can reciprocate to enhance our research. To this end, we are available to provide guidance in the development of the field test kits and assistance with training of your Delta Educational Leaders. My personal expertise appears to fit best with your CALFED Goals No. 2: Ecosystem Processes and No. 6: Sediment and Water Quality. However, I work with other investigators from the Biology Department at the University of the Pacific that will also be interested in the your project and could assist in other areas.

I wish you the best with your proposal and project, and look forward to working with you. Please feel free to contact me at glitton@uop.edu or (209) 946-3070.

Sincerely,

Gary M. Litton, Associate Professor



CAUFORNIA
REGIONAL
ENVIRONMENTAL
EDUCATION
COORDINATOR
NETWORK

May 9, 2000

Dear Grant Reviewers,

The Delta Studies Program, as proposed in the grant submitted by the San Joaquin County Office of Education, will be a valuable resource for county schools and will be incorporated into the work of the CREEC Network, Region 6A which is a statewide network of for environmental education and community partnerships. I have been CREEC Coordinator for two years, and this kind of curriculum is badly needed and important for students and teachers in our area.

As a CREEC representative, I have led monthly teacher meetings of teachers at schools throughout the county. I have seen the value of partnerships between agency personnel and teachers and the Delta Studies Program will bring together educators in county and resource personnel who can help to develop this valuable curriculum. I look forward to helping to develop the curriculum and being on the team.

I am also a middle school science teacher at Morada Middle School in Lodi District and, as trainer for Adopt-A-Watershed curriculum, I am always looking for new resources to teacher students about issues facing the Delta. The curriculum proposed will be utilized because it is locally developed, standards based and will also provide materials for its use.

I wholeheartedly support this proposal and am excited about the possible opportunity to help implement countywide.

FUNDED BY
CALIFORNIA
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ENVIRONMENTAL
EDUCATION GRANT
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IN PARTNERSHIP WITH

CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD.

CALIFORNIA
DEPARTMENT OF
WATER RESOURCES,
CALIFORNIA
AIR RESOURCES

SOARD

Mr. Doug Perry

CALIFORNIA Region 6A CREEC Coordinator &

Teacher, Morada Middle School

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Targeted Opportunities to Prevent Pollution in San Joaquin County

ADVISORY COMMITTEE MEMBERS

Ron Addington, Chair Susiness Council, Inc. Rod Attebery Neumiller & Beardslee Joseph Bagley Bagley Enterprises Wade Broughton General Mills Judith Buethe Buethe Public Relations John Cadrett SJ Valley Air Pollution District Ben Codog
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Lodi Municipal Utilities
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San Joaquin Delta College

Steve Gutierrez
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Jerry Weiland
Corn Products International
Judi Wilson
SJC Office of Education

May 10, 2000

Ms. Judi Wilson San Joaquin County Office of Education PO Box 213030 Stockton CA 95213

Dear Ms. Wilson,

The Targeted Opportunities to Prevent Pollution Advisory Committee (TOPPS) is pleased to support the proposal put forth by the San Joaquin County Office of Education called Delta Education Program: San Joaquin County Schools.

TOPPS has been attempting to educate citizens within San Joaquin County regarding the importance of pollution prevention and the consequences of not preventing pollution. Initially our goal was to involve schools but we soon found we were stretched too thin to achieve that portion of our goal. We are pleased that more outreach will be available to students, who will be the future citizens of our county and stewards of the environments, specifically the Delta.

TOPPS is a group of people representing businesses, government, and civic organizations whose mission is to inform, educate, and support San Joaquin County business, industry, and agriculture in their efforts to better the environment and improve financial performance by minimizing pollution to our air, water, and land. Education outreach is very important to us. This project is of the utmost importance to us due to the fact that it targets schools in our area. The activities planned as part of this project will go a long way toward our goals as well.

Sincerely,

Sylvia Kothe

TOPPS Advisory Committee Member

Sylva Kethe



SAN JOAQUIN COUNCIL OF GOVERNMENTS

6 South El Dorado St., Suite 400 · Stockton, California 95202

209.468.3913 • 209.468.1084 (fax) www.sjcog.org

May 11, 2000

John W. Harris

Dan Bilbrey

Julia E. Greene

Member Agencies
cities of
escalon.

LATHROP, LODI, MANTECA,

RIPON, STOCKTON, TRACY,

' AND
THE COUNTY OF
SAN JOAQUIN

Ms. Judi Wilson
San Joaquin County Office of Education
P. O. Box 213030
Stockton, CA 95213

Dear Ms. Wilson:

The San Joaquin Council of Governments is happy to support your Delta Education Program proposal. The San Joaquin Council of Governments is a joint powers agency that has been assigned the responsibility of preparing and implementing a countywide Habitat Conservation and Mitigation Plan that will preserve 11% of the County's land for threatened and endangered species. This is a 50 year plan and its success is dependent upon a citizenry in this county that understands and supports the protection of threatened and endangered species through the conservation of scarce and essential habitat. Your program proposal is one that helps us achieve our long term goals with the Habitat Plan.

Please let us know if you are successful in acquiring the resources to move this project forward, and how we can assist you in its implementation here in San Joaquin County.

Sincerely,

ANDREW T. CHESLEY

Deputy Executive Director



State of California - The Resources Agency

DEPARTMENT OF FISH AND GAME

http://www.dfg.ca.gov Central Valley Bay-Deita Branch 4001 N. Wilson Way Stockton, California 95205 (209) 942-6070



2/2

May 11, 2000

Ms. Judi Wilson, Director Math and Science San Joaquín County Office of Education PO Box 213030 Stockton, California 95213

Dear Ms. Wilson:

The goal of the Department of Fish and Game (DFG) is to interact with both teachers and students alike to develop an awareness for the environment in which they live. To assist in this effort, I have been involved with your office for the past three years instructing local area teachers about the Sacramento-San Joaquin Delta and its associated wildlife. I believe that your Delta Studies Curriculum and Delta Education Resources Center will assist DFG in meeting its goals.

I support your Program and would like very much to assist you and your staff in developing the curriculum and materials for the San Joaquin County Office of Education, Delta Education Resources Center.

Sincerely,

James A. Start

Associate Fisheries Biologist Central Valley Bay- Delta Branch

js00c130



CITY OF STOCKTON

DEPARTMENT OF MUNICIPAL UTILITIES 2500 NAVY DRIVE STOCKTON, CA 95206-1191 (209) 937-8750 FAX (209) 937-5708 May 11, 2000

Judi Wilson, Director of Math and Science San Joaquin County Office of Education P.O. Box 213030 Stockton, CA 95213

CALFED - DELTA STUDIES PROGRAM:SAN JOAQUIN COUNTY SCHOOLS

The City of Stockton Stormwater Management Division is pleased to lend its support to the grant proposal being submitted by the San Joaquin County Office of Education known as the Delta Education Program: San Joaquin County Schools.

The City of Stockton's Stormwater Management Division is responsible for the community outreach effort to educate its citizens with regard to the importance of stormwater pollution prevention. To this effort, the Stormwater Management Division has established an on-going partnership with the San Joaquin County Office of Education to educate our community's children to become stewards of the environment, especially the waters of the Delta.

As part of our on-going outreach effort, the City of Stockton's Stormwater Management Division is offering to assist the County's Delta Studies Program: San Joaquin County Schools program by providing educational material on water conservation, stormwater and pollution prevention for classroom instruction. Additional information will be contributed to the Delta Education Resource Center. Members of the Stormwater Management Division will participate as guest speakers and local resources in the classroom.

Best of luck in your pursuit of this project. Please feel free to contact the Stormwater Management Division at 937-8734 should you need additional information regarding this matter.

MORRIS L. ALLEN

DIRECTOR OF MUNICIPAL UTILITIES

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San Joaquin County Resource Conservation District

1222 Monaco Court, #23 Stockton, CA 95207

May 10, 2000

Judi Wilson
San Joaquin County Office of Education
P.O. Box 213030
Stockton, CA 95213

RE: CALFED Grant Application

Dear Ms. Wilson:

This letter is to support your CALFED Grant application for the San Joaquin County Schools' Delta Studies Program.

As you know, the San Joaquin County Resource Conservation District currently is overseeing the Lower Mokelumne River Watershed Stewardship Program planning effort. Education is one of the identified components of the plan. We believe that efforts such as yours to encourage youth education in resources stewardship will translate into both youth and adult community leaders active in resource stewardship within the watershed.

The San Joaquin County Resource Conservation District looks forward to working with your agency on this program in the future.

Sincerely,

John B. Meek, Jr.

President



Veray Wickham
Community Involvement
Coordinator
PO Box 213030
Stockton, CA 95213-90309
(2098) 468-9021
(209) 468-9102
vwickham@sjcoe.net

May 8, 2000

Judi Wilson
Director of Science and Math
San Joaquin County Office of Education

Dear Ms. Wilson,

As regional service-learning lead for education region six (Amador, Calaveras, San Joaquin, Stanislaus and Tuolumne Counties) I am pleased to collaborate with you on the Delta Studies Program. The partnership between environmental education and service-learning have proved to be a powerful way to meet both academic standards and community needs throughout the nation.

As service-learning lead I will assist with school projects, recruit and train appropriate community partners, provide staff development for teachers, and be an active participant in collaboration building activities.

I am looking forward to working with you and the schools and sponsoring partners throughout San Joaquin County participating in the Delta Studies Program.

Sincerely,

Veray Wickham

Community Involvement Coordinator



United States Department of Agriculture Natural Resources Conservation Service 1222 Monaco Ct. #23 Stockton, CA 95207 (209) 946-6229 FAX (209) 946-6036

May 10, 2000

Judi Wilson San Joaquin County Office of Education PO Box 213030 Stockton, CA 95213

Judi:

I enthusiastically support your CALFED grant proposal. Developing and delivering educational curriculum tailored to the Delta is vital to understanding this critical resource. I look forward to participating in the development of the program.

The Delta is a major part of San Joaquin County and your proposal will promote an interest and understanding of the issues in "our back yard." On a broader level, the materials you assemble can be exported to the other Delta counties and throughout the state.

David R. Simpson

District Conservationist



San Joaquin County Resource Conservation District

1222 Monaco Court, #23 Stockton, CA 95207

May 10, 2000

Judi Wilson
San Joaquin County Office of Education
P.O. Box 213030
Stockton, CA 95213

RE: CALFED Grant Application

Dear Ms. Wilson:

This letter is to support your CALFED Grant application for the San Joaquin County Schools' Delta Studies Program.

As you know, the San Joaquin County Resource Conservation District currently is overseeing the Lower Mokelumne River Watershed Stewardship Program planning effort. Education is one of the identified components of the plan. We believe that efforts such as yours to encourage youth education in resources stewardship will translate into both youth and adult community leaders active in resource stewardship within the watershed.

The San Joaquin County Resource Conservation District looks forward to working with your agency on this program in the future.

Sincerely,

John B. Meek, Jr.

President



STOCKTON UNIFIED SCHOOL DISTRICT

CURRICULUM and PROFESSIONAL DEVELOPMENT 1503 St. Mark's Plaza, Suite B, Stockton, California 95207 Phone (209) 953-3177 Fax 953-3181 Workshops 953-5011

May 11, 2000

Ms. Judi Wilson San Joaquin County Office of Education P.O. Box 213030 Stockton, CA 95213

Dear Ms. Wilson

Stockton Unified School District is pleased to support the proposal put forth by the San Joaquin County Office of Education called Delta Education Program: San Joaquin County Schools.

Our school district is located in the midst of a very dynamic waterways system. The Port of Stockton is an important deepwater, inland seaport and the Delta waterways provide a natural environment for many studies. It is critical that our students appreciate and protect these waterways. Unless they learn about the issues and care about the qualities that make our environment so important, they may not be able to be stewards of the Delta.

Stockton Unified School District serves over 35,000 students. One of our stated goals is that our students share responsibility to maintain and protect the environment. The activities planned as part of this project will assist us in attaining this goal.

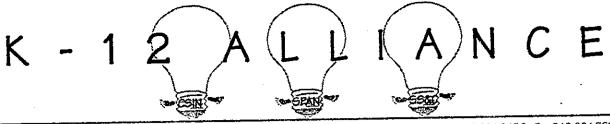
As a science program specialist, and biology teacher, I look forward to assisting in the development of the Delta Studies Curriculum. Environmental studies allow students to participate in hands on activities and provide a knowledge base for an educated responsible citizenry. I will be available to serve in an advisory capacity and to recruit participants and then assist in an action project with district staff and students. Many of our schools are close to waterways and the projects may include water quality testing, clean up, and population studies. Staff and students would have assistance in the development of a project of their own following guidelines to be developed by a curriculum committee.

Sincerely,

Jenny S. Wade

Science/Health Program Specialist

Lorna Sheveland, Director of Curriculum



Main Office • Science Education Programs • School of Physical Sciences • UC Irvine, CA • 92697-4680 • 949.824.8456 • Fax 949.824.7621

May 8, 2000

Judi Wilson
Director of Math and Science
San Joaquin County Office of Education
P.O. Box 213030
Stockton, California 95213-9030

Dear Ms. Wilson,

It is with great pleasure that I write this letter of support for the CALFED grant for the Delta Studies Program in San Joaquin County schools. I have been working closely with K-12 schools and teachers in San Joaquin County for many years and know the importance of teaching students environmental education curriculum and concepts. The goals of this project, to provide materials, curriculum, and software in sixty targeted schools will serve to impact hundreds of students in this county. Students in this region would have the unique opportunity to learn about and gain in-depth understanding of aquatic and terrestrial habitats of the Sacramento-San Joaquin Delta area while developing stewardship for their environment.

As a Regional Director for the K-12 Alliance, a statewide professional development organization providing quality training in math and science, this project would compliment and extend the work we are currently doing with teachers in this region. I would be happy to serve on the curriculum development committee, as well as provide expertise and support to ensure the units are standards based and aligned with the new California Science Standards. I'd also look forward to working with the cadre of teacher leaders to assist with the implementation of the curriculum units.

Please keep me informed on the progress of this grant proposal.

Sincerely,

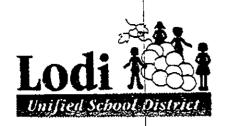
Diane Carnahan

Regional Director, K-12 Alliance

tane Carnahan

(209) 468-9096

diane carnahan@cams.edu



Randy Malandro, Curriculum Coordinator Curriculum, Instruction, & Assessment 1305 East Vine Street

Lodi CA 95240 (209) 331-7028 • (209) 953-8028

May 11, 2000

Ms. Judi Wilson San Joaquin County Office of Education PO Box 213030 Stockton, Ca. 95213

Dear Ms. Wilson,

I am pleased to support your proposal to CALFED for a curriculum-based program on the issues pertaining to the Delta. The schools in our district want and need some focus for environmental education. This program, with accompanying action projects, will be a wonderful complement to standards-based lessons in K-12 classrooms.

The Delta Studies Curriculum, with its interdisciplinary focus, has potential to impact thousands of students in our district and help to produce informed and educated voters for our county in the future. We can't afford to ignore this tremendous resource sitting in our midst, and our district realizes the importance of providing environmental education, but we also are mandated to implement the California Academic Standards and continue to provide quality content instruction for our students. The Delta Studies Curriculum helps to bring standards, content, and local issues together.

We look forward to working with you on this project and will sponsor our Science Curriculum Specialist to assist with the curriculum development, assist to recruit D.E.L.T.A. Teacher Leaders, and provide guidance to the schools in our district who are targeted for this project.

Sincerely,

Randall J. Malandro

Curriculum Coordinator

RM:cp